



AAP



Utrecht  
University

# POACHING AND TRADE OF BARBARY MACAQUES

Prof. dr. Daan van Uhm & drs. Elske de Vlugt

Commissioned by Stichting AAP

2025

## Content

<b>1. Population Decline .....</b>	<b>2</b>
<b>2. Trade and Protection .....</b>	<b>4</b>
2.1 International Trade and CITES .....	4
2.2 Legal Protection in Morocco and Algeria.....	6
<b>3. Methodology.....</b>	<b>7</b>
<b>4. Confiscation Data and Requests for Shelter .....</b>	<b>8</b>
<b>5. The Poaching of Barbary Macaques .....</b>	<b>11</b>
5.1 Poaching in Morocco .....	12
5.1.1 Ifrane National Park .....	13
5.1.2 Khenifra National Park .....	14
5.1.3 Mount Gourougou .....	16
5.2 Poaching in Algeria.....	18
5.2.1 Chr�a National Park .....	19
5.2.2 Djurdjura National Park.....	20
5.2.3 Gouraya National Park .....	22
<b>6. The Monkey Business.....</b>	<b>24</b>
<b>7. Entertainment, Culture and Legislative Loopholes .....</b>	<b>27</b>
<b>8. Conservation and Awareness Programs .....</b>	<b>29</b>
<b>Conclusion .....</b>	<b>30</b>
<b>Literature.....</b>	<b>32</b>

## 1. Population Decline

In the Pleistocene period the Barbary macaque, also known as the Barbary ape, inhabited parts of Europe and virtually all of North Africa. Based on fossil findings their population distribution ranged from the south of England to Turkey and along the Mediterranean coast from Syria to Morocco (Lindburg 1980; Camperio Ciani 1986).<sup>1</sup> Since then, the Barbary macaque has disappeared from the northern coasts of the Mediterranean and Sardinia and in the last few centuries from Turkey (Mouna and Camperio Ciani 2006). The reduced population of the Barbary macaque has been influenced by habitat loss and climate change and the associated impacts on vegetation and the availability of resources (Elton and O'Regan 2014).

Whilst the Barbary macaque was once widespread throughout North Africa, its current distribution is solely limited to small, relict patches of forest and scrub in the rocky areas of the Rif and Atlas Mountains in Morocco, and in parts of the Tellian Atlas in Algeria (Fa et al. 1984; Camperio Ciani 1986; Scheffrahn et al. 1993; Menard and Vallet 1993).<sup>2</sup> These wild macaque populations are separated by large distances caused by habitat degradation in North Africa (Waters 2011; Majolo et al. 2013). A semi-wild population of around 200 macaques living in the Upper Rock Nature Reserve of Gibraltar in Europe is the only existing population outside of Northern Africa (Picture 1).<sup>3</sup>

**Picture 1: A Barbary macaque at the Rock of Gibraltar, 2023**



---

<sup>1</sup> The Barbary macaque is the only macaque found in Africa and is characterized by the absence of a tail, as is found in true apes.

<sup>2</sup> The Middle Atlas Mountains house the largest population of wild Barbary macaques (Mouna and Camperio Ciani 2006).

<sup>3</sup> The origins of the Gibraltar population are unclear: they may have originated from a remnant European population, or it may have been a consequence of the translocation of animals from Africa. Legend has it that as long as the Barbary apes roam the rock of Gibraltar, the territory will remain safely under British rule (Fa 1981; Modolo et al. 2005).

In both Morocco and Algeria, the population of the Barbary macaque, (المكاك البربري) has decreased significantly in recent decades, mainly due to loss of habitat (Camperio Ciani et al. 2005). The total population size of Barbary macaques decreased from an estimated 21,500 individuals in the 1970s (Taub 1977, 1978; Fa et al. 1984) to 10,000-16,000 in the early 1990s (Lilly and Mehlman 1993; von Segesser et al. 1999). Recent reports have noted declines to 10,000 in 2005 and 5,000-6,000 in 2010 (van Lavieren and Wich 2010; Modolo et al. 2005). In 2020, the global population was estimated to be fewer than 13,000 individuals (CITES 2016; Ahmim and Labiod 2020). More systematic population surveys across the Barbary macaque range in Morocco and Algeria would offer more accurate estimates of the present state of the overall population (Table 1).

**Table 1: Barbary macaque population**

Location	Population	Year of Survey	Source
Morocco	17,000	1974	Taub (1975)
	10,000	2002	Camperio Ciani et al. (2003)
	6,000-10,000	Unknown	Ross (2004)
	5,000		Camperio Ciani et al. (2006)
	8,000-9,000		CITES (2016)
Middle Atlas	5,000		Menard et al. (2014)
High Atlas	1,000		Waters et al. (unpublished)
Northern Rif	2,000		Waters et al. (unpublished)
Algeria	4,150-5,850	1974	Taub (1977)
	3,229-3,888	2016	Ahmim and Labiod (2020)
Chiffa gorges	200	2015	Benrabah (2015)
Grande and Petite Kabylie	1,300-2,800	2015	Benrabah (2015)
Gibraltar	230	2020	Gibraltar Ornithological and Natural History Society (unpublished 2020)
Global	≥ 21,500	1974	Taub (1975)
	10,000-16,000	1992	Lilly and Mehlman (1993)
	15,000	Unknown	Segesser et al. (1999)
	10,000		Modolo et al. (2005)
	5,000-6,000	Unknown	van Lavieren and Wich 2010
	11,229-12,888		CITES 2016; Ahmim and Labiod (2020)

## 2. Trade and Protection

The Barbary macaque has been associated with humans for thousands of years (Veracini 2020). They have been found mummified in Egyptian pyramids and petrified in Pompeii (Bailey et al. 1999; Goudsmit and Brandon-Jones 1999). They were kept as pets by ancient Romans and Greeks and were frequently found in early Etruscan art (McDermott 1936; Hughes 2003). During the medieval period they were coveted as emblems of distinction amongst the nobility (Sax 2001). Illustrations of Barbary macaques at the Iron Age Navan Fort in Northern Ireland and fossils in Carrickfergus evidence the importation of domestic macaques (Taub 1978; McCormick 1991). In the 13th century the opening of trade routes with the Near East led to the widespread introduction of monkeys to Western Europe. Barbary macaques were common at that time in the Mediterranean basin: canons of Notre Dame kept them in their cloisters and monkeys were displayed in courts as a signification of wealth and social status (Janson 1952).

### 2.1 International Trade and CITES

In the 20<sup>th</sup> and 21<sup>st</sup> centuries the primary habitat of the Barbary macaques, the mountainous cedar forests, have been significantly reduced due to forest degradation (Camperio Ciani 1986; Camperio Ciani et al. 2005). Whilst the main threat to the Barbary macaque populations is habitat loss caused by intensive (illegal) logging, land clearance for agriculture, charcoal production, and overgrazing by livestock, the illegal trade in macaques is another crucial threat to the survival of the species (Fa 1984; Camperio et al. 2005; Majolo et al. 2013; Radhakrishna et al. 2012; Butynski et al. 2008; Van Uhm 2016a). In the 1970s it was already observed how the wild population of Barbary macaques was declining not only due to the destruction of native forests, also as a consequence of their capture and sale in various department stores across Europe (Van Uhm 2014).<sup>4</sup> In the mid-1970s, it was easy to capture and export macaques in quantities of under 100 animals (Taub 1978: 251). In addition to their popular demand as pets the monkeys were also in demand for medical testing in laboratories, as their close resemblance to human anatomy makes them suitable subjects for medicinal research (Gibbs et al. 2007; Van Uhm 2016b).<sup>5</sup> In 1975 the Barbary macaque species was subsequently listed as threatened in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (EC 338/97, Annex B) in 1975.

The vast majority of protected species (±39,000) are listed in Appendix II. International trade may be authorized by the granting of an export permit or re-export certificate. Essentially, CITES I species are only allowed to be traded in exceptional circumstances. To trade species that are listed on any of the three CITES appendices an export permit is required. However, for Appendix I species an additional import permit is required. The import permit will only be issued if the specimen is not used for primarily commercial purposes and if the import will be for purposes that are not detrimental to the survival of the endangered species. An export permit may be issued only if the specimen was legally obtained; the trade will not be detrimental to the survival of the species; and an import permit has already been issued (Box 1).

---

<sup>4</sup> Thousands of monkeys were brought from Africa, Asia, and Latin America to answer the demand from Europe (Broad et al. 1988).

<sup>5</sup> Macaques share about 90 percent of DNA with humans and are therefore widely used as test animals (Gibbs et al. 2007).

#### Box 1: CITES

CITES is the Convention on International Trade in Endangered Species of Wild Fauna and Flora, an international agreement between governments that came into force in 1975. The aim of CITES is to ensure that the international trade in wild animals and plants is not a threat to the conservation of species in the wild. CITES regulates the trade in more than 40,000 species, both animals and plants. The species covered by CITES are listed in three Appendices:

- CITES Appendix I species are seriously threatened with extinction. The commercial trade in species derived from the wild is therefore strictly forbidden. The trade in captive-bred CITES I species or parts or products thereof is permitted, subject to compliance with specific conditions. To import CITES I species an import and export or re-export certificate is required.
- CITES Appendix II species are not directly threatened with extinction but consist of vulnerable populations. It is assumed that if the trade is not regulated, these species may become threatened with extinction in the near future. The trade in these animals is permitted if an export permit or re-export certificate is issued. No import permit is required.
- CITES Appendix III includes species where the country of origin will offer protection. Therefore, the trade therein is subject to special procedures and the international trade in CITES III species is only permitted with the appropriate permits or certificates.

From the late 1990s onwards zoological parks and sanctuaries in Europe noticed a significant increase in the number of Barbary macaques being offered for shelter, following their seizure by law enforcement authorities in Belgium, France, Italy, Spain, and the Netherlands (Van Lavieren 2004; Van Uhm 2014). In 2000, the European Community then suspended the import of the Barbary macaque from Morocco and Algeria under article 4.6b of Council Regulation (EC) 338/97.<sup>6</sup>

During the 2000s, the Barbary macaque became the most frequently seized CITES-listed mammal in the European Union, accounting for almost 25% of the live mammal-related confiscations between 2001-2010. During this 10-year period 49 separate seizures totalling 55 Barbary macaques occurred in the EU, with 90% originating from Morocco and 8% from Algeria (Van Uhm 2016a). Between 2006 and 2010 the Barbary macaque was also the most commonly confiscated mammal recorded by breeding programmes within European zoos (Zimmerman 2011). Most of these macaques were confiscated in Spain because of the lack of CITES-documents, the majority being intercepted in the ports of Algeciras, Cadiz, Alicante, and Melilla (Van Uhm 2016b).<sup>7</sup>

In the period between 2000 and 2010 around 200-300 Barbary macaques were estimated to be smuggled to the EU each year (Van Lavieren 2008; Van Uhm 2014). In response to the threat posed by illegal trade to the relatively small wild population, the Barbary macaque was uplisted from

---

<sup>6</sup> Overall, the population of this species is estimated to have declined at a rate exceeding 50 % over the last 3 generations (24 years) and the Barbary macaque was classified as 'endangered species' in the IUCN Red List of Threatened Species (Butynski et al. 2008).

<sup>7</sup> EU-TWIX, 2013; Confiscations by the Seprona Guardia Civil, Spain between 2006-2012.

CITES Appendix II to CITES Appendix I in 2017. The uplisting banned commercial international trade in Barbary macaques and member states were encouraged to implement national policies and action plans for the conservation of the species.<sup>8</sup>

## 2.2 Legal Protection in Morocco and Algeria

Morocco ratified the CITES convention on 21 October 1975, published under dahir No. 1-75-434 of 25 hijra 1396 in 1976. The international commercial trade of Barbary macaques from Morocco is therefore prohibited. The species also receives additional protection under the Moroccan law No. 29.05, which prohibits endangered fauna and flora, including the Barbary macaque, to be handled without official permits or certificates (Box 2). This protection includes trading restrictions for the buying, selling, renting, importing, exporting, transiting, and transporting of the species, as well as restrictions on poaching, taking, killing, breeding, raising, holding, and re-introducing the species (Campbell, 2019). Since the uplisting, the Barbary macaque now falls under higher protection as a Category I species and the punishment for law violating law no. 29.05 is more severe; the scale of fine for the illegal poaching, killing, trading and keeping of the Barbary macaque has increased from between 20,000 to 50,000 Dirhams to 30,000 to 100,000 Dirhams. However, Law No. 29-05 also includes measures for regulating the possession of Barbary macaques for cultural purposes through a scheme of ownership certification per specimen.<sup>9</sup> Consequently, Barbary macaques are often found in public places, performing with trainers and for photographs with tourists, such as the Djeema El-Fna square in Marrakesh that is classified as an UNESCO world heritage site.

---

<sup>8</sup> The uplisting of the Barbary macaque from CITES Appendix II to Appendix I also implies that for non-commercial trade of Barbary macaques, besides an export permit, an additional import permit is required which will only be issued with permission from a scientific authority; the export permits for Appendix I species will only be issued once an import permit has been issued. The uplisting has therefore resulted in additional trading restrictions to constrain the trade in live Barbary macaques. The countries that have ratified this convention must adhere to these guidelines.

<sup>9</sup> Royaume du Maroc (2012) Conservation Action Plan for the Barbary macaque (*Macaca sylvanus*) in Morocco.

#### Box 2: Law No. 29.05

The law No. 29.05 has classified endangered species relating to the CITES appendices in four categories:

- Category I: Species listed in Appendix I of the CITES Convention, for which the Kingdom of Morocco has made no reservations
- Category II: 1) The species listed in Appendix II of the CITES Convention for which the Kingdom of Morocco has made no reservations; 2) species listed in Appendix I of the CITES Convention for which reservations have been made by the Kingdom of Morocco; 3) specimens of species classified in category I resulting from breeding or reproduction
- Category III: The species listed in appendix III of the CITES convention as well as those listed in appendix II of the said convention for which a reservation has been made by the Kingdom of Morocco
- Category IV: National flora and fauna species threatened with extinction, not classified in categories I, II and III above, as well as species whose survival is compromised by trade

The violation of law No. 29.05 is punished with fines corresponding to the different categories of endangered species. As for Category I species the fine can be 30,000 to 100,000 Dirhams; Category II species can be 20,000 to 50,000; Categories III and IV can be 5,000 to 20,000 Dirhams. Furthermore, one can also be fined 10,000 to 50,000 Dirhams for using a forged, expired or altered permit or certificate.

Algeria also ratified the CITES convention on 23 November 1983, which has been implemented under decree No. 83-509 since 1983. The international commercial trading of Barbary macaques from Algeria is therefore prohibited according to CITES. In Algeria, the Barbary macaque is protected by Law No. 12-235, which consists of a list of all protected, non-domesticated animal species, and law No. 03.10 which prohibits their poaching, capturing, killing, harming, selling, buying, using, or transporting without the right authorization. Law No. 03.10 also ensures the protection of the natural habitat of all non-domestic species (Majolo and Maréchal 2021; Meziane et al. 2022). Being included in the list of endangered species designated by law No. 12-235 implies that in addition to the basic protection under law No. 03.10, these species also enjoy the protection of specific conservation actions. This means an action plan should be established to ensure their survival during a specific period of time in which they are deemed most vulnerable. The laws about poaching, trading, or keeping a Barbary macaque within Algeria have not changed since the uplisting.

### 3. Methodology

This research focuses on the poaching and illegal trade in Barbary macaques after their uplisting from CITES Appendix II to CITES Appendix I in 2017. In order to retrieve an overall picture of the illegal trade in the Barbary macaques, quantitative and qualitative research methods have been combined within this study. The quantitative data is gathered from databases of the EU-TWIX,

CITES, and rescue centres, while the qualitative data was gathered via semi-structured interviews and participant observation in Morocco, Algeria and Spain.

The quantitative data of confiscations were gathered from the EU-TWIX database, which centralises the information on wildlife trade seizures submitted by European enforcement agencies, combined with the recorded confiscations of the CITES and police authorities in Belgium, France, Italy, the Netherlands and Spain. This data provides an overarching picture of trends in the illegal trade of Barbary macaques.<sup>10</sup> The data from the EU-TWIX database includes the number of confiscations of Barbary macaques in Europe recorded by the EU-member countries.<sup>11</sup> In addition, data on confiscations was gathered by contacting the national CITES and police agencies of Belgium, France, Italy, the Netherlands and Spain. These five countries have been chosen to expand on the longitudinal trend of Barbary macaque confiscations described in previous research (van Uhm 2014). Furthermore, data on the yearly shelter requests for confiscated, surrendered, or abandoned Barbary macaques by rescue facilities have been provided by Stichting AAP.

As for the qualitative data, semi-structured interviews were conducted with 43 respondents to strengthen the quantitative data with rich information based on the current situation. Semi-structured interviews were chosen as they accommodate flexibility, which allows specific issues to be addressed in more detail whilst maintaining a clear focus on the poaching and illegal trade in Barbary macaques (Van Uhm 2018). Total respondents included nine (former) poachers, three middlemen, two smugglers, 12 (former) traders, five rangers, and twelve experts from Morocco, Algeria and Spain. These respondents were collected by snowball sampling; further participants were recruited via their acquaintances and through the first point of access. The interviews were conducted over a 1.5-year period, between January 2023 – June 2024, and provided key information about the poaching and trade after the CITES uplisting.

While quantitative research excels at the statistical analysis of a problem when identifying generalizations, patterns, and trends of phenomena over a longer period of time (Piquero and Weisburd 2010), qualitative research provides rich context and depth within the field of criminology (DeWalt and DeWalt 2011). Drawing upon both in the mixed-method approach of this study allowed for methodological triangulation and an overall strengthening of the internal validity of the research (Bows 2020).

## 4. Confiscation Data and Requests for Shelter

Morocco and Algeria are well-known ports between Africa and Europe for legal *and* illegal trade, including illegal migration and drugs trafficking alongside illegal wildlife trade. Based on the

---

<sup>10</sup> There are significant discrepancies between the numbers in the EU-TWIX database and the numbers of confiscations provided by the CITES and police authorities.

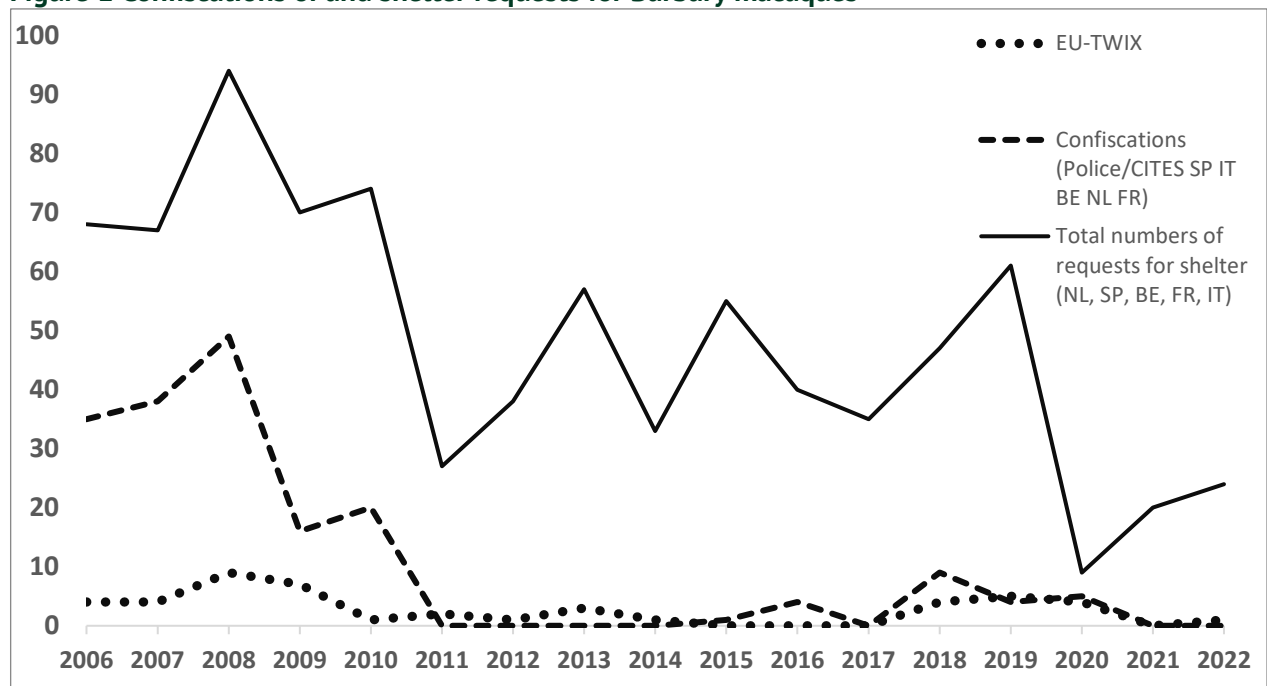
<sup>11</sup> The EU-TWIX database has been established in order to assist national law enforcement agencies, including CITES Management Authorities and prosecutors, in their task of detecting, analysing and monitoring illegal activities related to trade in fauna and flora covered by the EU Wildlife Trade Regulations. However, the database is fully dependent on input from CITES agencies the national police agencies of the EU-member states (Blundell and Mascia 2005; Van Uhm 2016a). The quality of the data is therefore lacking in completeness which tampers with the accuracy to represent the full scope of illegal wildlife trade (Van Uhm et al. 2019). Language barriers and data sharing ability can also be a difficulty since data standardizing can be time-consuming and may introduce errors (Elliott and Schaedla 2016).

confiscations of illegal wildlife shipments to Europe, both Morocco and Algeria are considered to be important origin countries over the past decades.

The Barbary macaque was the most seized CITES-listed mammal in the EU between 2001-2010 (Van Uhm 2014). However, the longitudinal trend of confiscations of Barbary macaques has been declining over the last decades in the EU. No more than 5 confiscations of Barbary macaques have occurred via EU-TWIX seizures in every year since 2010.<sup>12</sup> Similarly, between 2006-2010 the yearly average was approximately 32 confiscated Barbary macaques, as recorded per year by the police and CITES-authorities of Belgium, France, Italy, the Netherlands, and Spain. Since 2010 this has significantly decreased to only a few confiscations per year, with the overall trend from 2006 to 2022 showing a decrease of 90% (Figure 1).

Between 2006-2010, the most Barbary macaques were confiscated in Spain (64%), France (18%), Belgium (13%), Italy (3%) and the Netherlands (2%). Between 2011-2022 the most were confiscated in Spain (39%), Italy (30%) and France (21%). This emphasises the important role of Spain, France and Italy as geographically attractive routes for smuggling Barbary macaques into Europe, with France also representing as an important destination country (Bergin 2019; Van Uhm 2016a).

**Figure 1 Confiscations of and shelter requests for Barbary macaques**



Source: Personal analyses of the EU-TWIX database; confiscations from police and CITES-authorities of Belgium, France, Italy, the Netherlands, and Spain; AAP database of requests for shelter, 2006-2022.

Important to note is how the uplisting of the Barbary macaque on the CITES Appendix I appears to have a slight impact on the trend of yearly confiscations. Whereas from 2006 to 2010 a significant decrease in yearly confiscations can be seen there is a modest increase in confiscations

<sup>12</sup> Especially in the last two decades, a sharp decrease in confiscations can be seen with a total of seven years where zero confiscations took place.

after the uplisting in 2017.<sup>13</sup> In the first three years after the uplisting the EU-TWIX database recorded more than four confiscations per year, and the CITES and police authorities of Belgium, France, Italy, the Netherlands, and Spain recorded 6 confiscations annually. After three years, the confiscations dropped again to less than one yearly in 2021 and 2022. Even though significant decreases took place from 2006-2010 already, this illustrates that the uplisting may have a slight effect on the number of yearly confiscations. Resource allocation at border controls due to the higher protection status could have caused a slight increase in yearly confiscations, with lower arrests in the following period being due to the deterrent effects of the criminalisation (Duff et al. 2010; Sherman, et al. 1997; Van Uhm, 2023).<sup>14</sup>

Similar to the confiscation data, the general trend in requests for shelters for Barbary macaques has been decreasing over recent decades. Whereas from 2006-2010 the yearly average was about 75 requests a year, from 2011-2016 this became around 40 requests per year, with the trend for 2017-2022 showing a further decrease to 30 requests per year. In the years after the uplisting the requests for shelter increased, but dropped in 2020 from 61 to only nine a year later. However, a general decline in overall crime during the outbreak of the global COVID-19 pandemic, may also have impacted the numbers (Campedelli et al. 2020; Perez-Vincent et al. 2021).<sup>15</sup>

From 2006-2022 the longitudinal trends in confiscations and the requests for shelter at rescue facilities have shown a gradual decline of 90% and 60% respectively, which may indicate a decrease in the overall poaching and trafficking of the Barbary macaque. In 2010 the illegal trade in Barbary macaques was estimated at 200-300 monkeys annually, with 20 confiscations and 74 requests for shelter (Van Uhm 2016a). Since the declining confiscations and requests for shelter show a decrease of more than two-third in comparison to the numbers of 2010, by extrapolation the illegal trade could potentially be around 100 monkeys each year. To further complement and verify these trends, additional primary data on the poaching, trade, and conservation of Barbary macaques will be discussed in the next section.

---

<sup>13</sup> For instance, the trend for 2017-2022 shows a slight increase to an average of three Barbary macaques per year compared to the decade before in the EU-TWIX data.

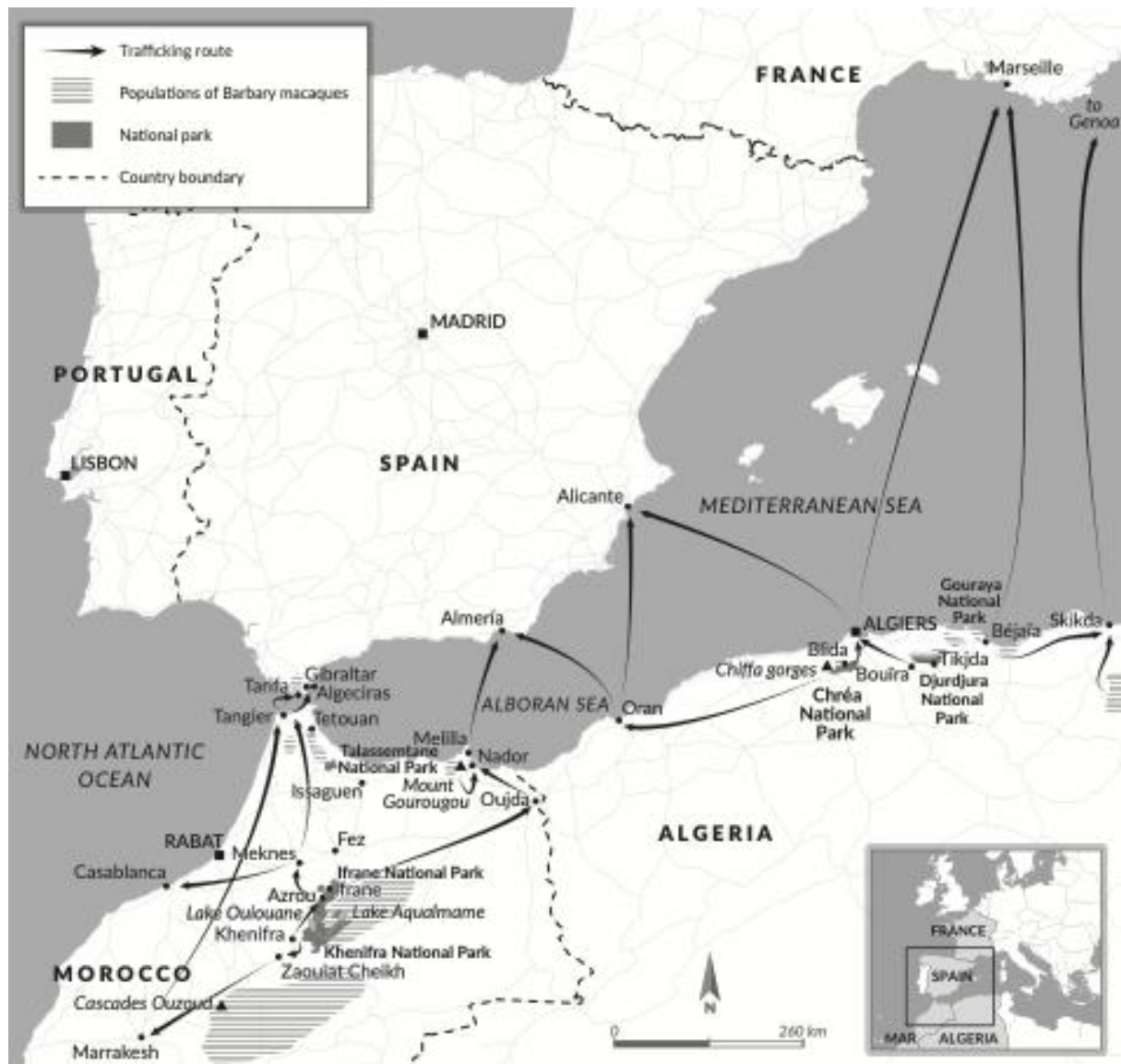
<sup>14</sup> The confiscation data only shows the macaques that are being confiscated and does not include the more 'successful' smuggling cases who get past border controls without any problems (Brame et al. 2010; Van Uhm et al. 2019). The trend is therefore only meant as a tool to indicate the potential scope of the trafficking problem (Petrossian et al. 2016). An increase in confiscations can indicate a growth in smuggling but could also indicate more effective or efficient law enforcement performances with more confiscations as a result. On the contrary, a decrease could suggest a declining interest for smuggling, though it could likewise indicate a surge in more sophisticated smuggling techniques or an absence of confiscations due to limited space in rescue facilities. These issues illustrate the difficulty of numbers, since they often lack depth to draw exact conclusions out of (Van Uhm 2016a).

<sup>15</sup> These studies argue that the mobility restriction and disruption of transportation routes were the underlying reason for the overall decline in crime rates. However, the trends stayed low after the years, which can indicate increased awareness through educative initiatives and an aversion to wildlife – including Barbary macaques – as pets due to a broader awareness of the effect of zoonotic diseases on public health since COVID-19 (Van Uhm and Zaitch 2019).

## 5. The Poaching of Barbary Macaques

The Barbary macaque, native to the Atlas and Riff Mountains in Morocco and Algeria, is threatened by poaching and trade (Map 1).<sup>16</sup> The poaching season begins in April during birthing period when there are many infant monkeys. There is a demand for young monkeys because they become normalised to humans better than older adults, and because they are easier to smuggle in suitcases or bags. Previous studies have highlighted a significant drop in the number of juvenile macaques as a result of poaching (Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification 2012; IUCN and Direction Générale des Forêts 2019).

**Map 1: Smuggling routes for Barbary macaques**



Source: Interviews and personal analyses of confiscations in the EU

<sup>16</sup> The poaching of wildlife refers to a variety of offences that criminalize the unlawful taking of wild animals (UNODC 2024).

When capturing Barbary macaques there are five key techniques used. For the first, groups of around 6–7 poachers isolate female Barbary macaques carrying infants from their familial group by using trained dogs. They goad them from the dense forest into a solitary tree, then saw the branches and harass the mother with sticks and stones until the babies are dropped. The second technique entails poachers placing grids on the ground and waiting until macaques walk over them. They then pull on a rope connected to a net that falls to the ground and traps the monkey. Third, poachers sometimes entice Barbary macaques with fruit or coconuts until they are close enough to catch, or place fruit in the back of a car and close the doors once the monkey is inside. The fourth method involves poachers burying a half-cut bottle of water and placing a string around the entrance which they can fasten as soon as the macaque puts the head in the bottle. Finally, poachers also place water containers mixed with alcohol to anesthetize the Barbary macaques so that they are easier to catch (Table 2).<sup>17</sup>

**Table 2: Poaching techniques**

Poaching technique	Description
Isolate	Poachers isolate female monkey with infants from the group by trained dogs and then harass the mother with sticks and stones, until the babies are dropped
Trap	Poachers place grids on the ground and pull a rope to drop a net that hangs in trees to catch the monkey
Entice	Poachers entice monkeys with fruit or coconut, until they are close enough to catch them
Snare	Poachers bury a half-cut-off bottle of water and place a snare around the entrance to catch the monkey
Anesthetize	Poachers provide water containers with alcohol to anesthetize the monkey

Source: Interviews and empirical data from previous research (Van Uhm 2016a)

## 5.1 Poaching in Morocco

In Morocco, the Barbary macaque is considered as an important animal of ecological and cultural heritage (Veracini 2020; Waters et al. 2019). However, poaching of Barbary macaques in Morocco has remained a serious threat to the endangered species (Van Uhm 2016b). Poaching occurs in and around national parks, including Ifrane National Park and Khenifra National Park in the Middle Atlas Mountains and Mount Gourougou in the Riff Mountains.

---

<sup>17</sup> The development and improvement of the poaching techniques shows the adaptability of the poachers, where changes in wildlife behaviour, environmental circumstances and even legislation can be a trigger for an adaption of the *modus operandi* (Barr and Pease 1990; Burton et al. 2020).

### 5.1.1 Ifrane National Park

Located in the Atlas Mountain range, about half of all remaining Barbary macaques in Morocco live in the cedar tree expanse of the Ifrane National Park (Picture 2). The Berber town of Azrou and the surrounding cedar forest has been known as a poaching hotspot for years. Barbary macaques were first caught in the forest area for biomedical research; however the hunting permits were also misused to poach additional monkeys for illegal sales. This was the start of the large-scale poaching of Barbary macaques in Ifrane National Park (Van Uhm 2014).

From 2000-2010, the poaching of Barbary macaques became an important business in Azrou, facilitated by networks of poachers, middlemen, smugglers, and traders. Large orders for monkeys were placed in advance and European tourists travelled to the area to buy young Barbary macaques directly from the traders. Even some forest rangers used to be involved in this illegal trade by connecting potential customers with poachers for a commission of 100 Dirhams.

**Picture 2: A wild group of Barbary macaques in Ifrane National Park, 2023**



The poaching of Barbary macaques has become less tolerated in recent years. In the early 2010s there were already accounts of poachers and traffickers being arrested and facing fines and imprisonment, which pushed the trade into the dark circuit. Exchanges and arrangements were being made late at night and out of the public eye to avoid attention from the police (Van Uhm 2016a).

Since the CITES uplisting in 2017 large-scale poaching and trade is less common in Ifrane National Park. A former poacher in a small village near Azrou explained:

*“At the moment, it’s only on a small scale, if anything is happening at all. Most days, it seems like there is nothing. [...] It’s more difficult to poach the monkeys now because there is a lot of control.”<sup>18</sup>*

Currently, several scouts patrol and control the forest for any suspicious activities regarding poaching or illegal logging.<sup>19</sup> Even though Azrou has a reputation for being a poaching hotspot, increased surveillance, prioritization, and awareness makes the area less attractive for poachers due to the higher chance of detection. However, the downside to this type of crime prevention is its situational dimensions and constraint to specific areas (Pires and Moreto 2011). Active poachers from a small village in the surroundings of Ifrane National Park have stated they now poach deeper into the forests, and only during the night or early morning when there is less control:

*“They will go into the middle of the forest. Then he does what he has to do. Over there, it’s relatively easy. There are many monkeys, so they take one. So yeah, it’s easy for that because when the group goes to that side of the forest early in the morning, very early, nobody will see...”<sup>20</sup>*

Poachers explained how current prices for the macaques, which ranged from 2,500 to 3,000 Dirhams, are now higher than previous prices of around 1,500-2,000 Dirhams.<sup>21</sup> They also explained a fear of being accused of poaching, of legal repercussions, and of fines and imprisonment; even having knowledge of the topic generates a stigma from which people refrain (Becker 1963). Consequently, poaching activities have moved to other places that were less controlled such as Khenifra National Park and Mount Gourougou, illustrating how repression of illegal activities in one location may cause an increase in the same criminal activities somewhere else - the so-called waterbed effect.

### 5.1.2 Khenifra National Park

Khenifra National Park is located 100 kilometres south of the Ifrane National Park in the Middle Atlas Mountains. There are several wild Barbary macaque groups living in Khenifra’s cedar forest, including populations in the forests surrounding Lake Aqualmame and Lake Ouiouane. Since there is less control, poachers have moved their activities here. According to one Moroccan expert:

*“There is no official control in Khenifra National Park; there are only occasional controls. This is why poaching has moved to this park. Here in Ifrane, there is too much control and police presence. It’s better in Khenifra, as there are only a few controls in that region.”<sup>22</sup>*

Lake Aqualmam, one of the main tourist attractions of the Khenifra National Park, is considered a poaching hotspot. The large turquoise lake with a variety of tea and Tajine restaurants surrounding the flanks of the area is a popular holiday destination for many Moroccan tourists. Several restaurant and shop owners around Lake Aqualmam referred to poaching activities and

---

<sup>18</sup> Interview with former poacher in a small village near Azrou, Morocco, May 2023.

<sup>19</sup> The presence of scouts in the forests is an example of the anti-poaching initiatives that have been implemented in the Ifrane National Park since the Born to be Wild project. Implementing scouts is a form of situational crime prevention which seems to be an effective measure for reducing poaching in a specific part of the forest. The patrolling and controlling of the scouts makes it more challenging for people to poach since there is a higher chance of being detected.

<sup>20</sup> Interview with poacher in a small village near Azrou, Morocco, May 2023.

<sup>21</sup> Interviews with poachers, middlemen, and traders, Morocco, May and October 2023 and May 2024.

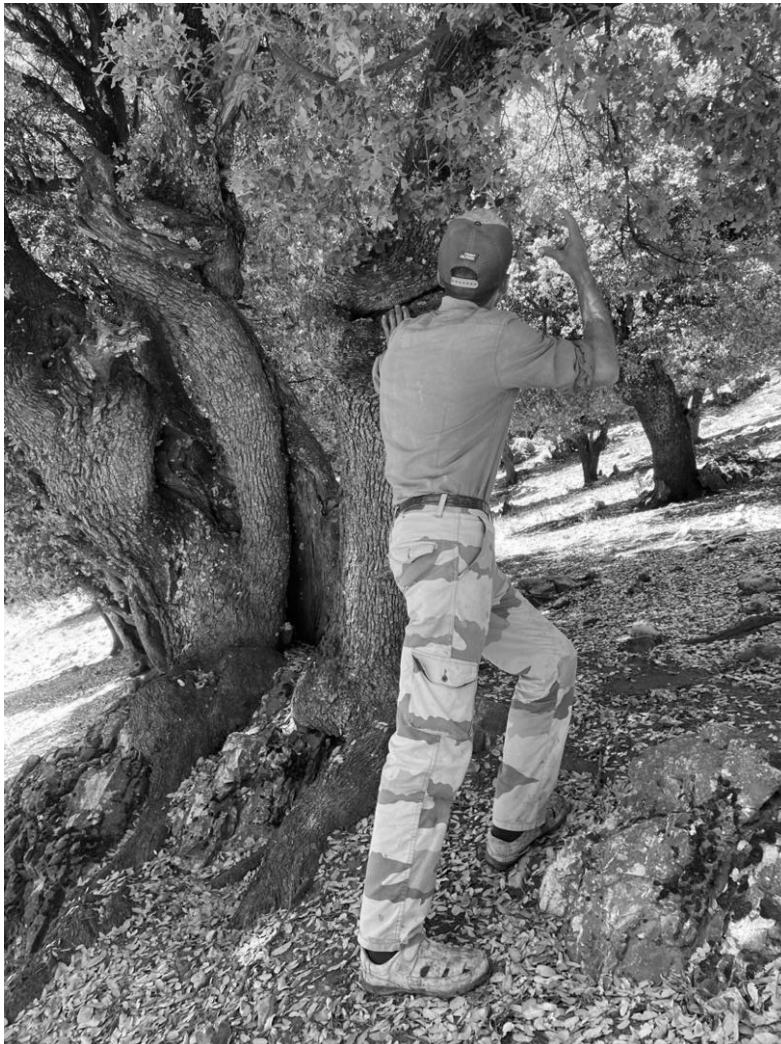
<sup>22</sup> Interview with local expert in Ifrane National Park, Morocco, May 2023.

respondents described an increase in local poaching following stricter controls in Ifrane National Park. One Moroccan respondent provided a concrete example of geographical crime displacement:

*“This guy, poaching Barbary macaque was his main activity, so he was not doing anything else like farming or like working as a shepherd or anything, or like witchcraft or something like that. After that, his activities within Ifrane National Park were completely abandoned due to the presence of the anti-poaching unites and the scouts etc. But he has found an alternative, especially in Khenifra where there are a lot of Barbary macaques.”*<sup>23</sup>

This demonstrates how the poacher has abandoned his activities in Ifrane National Park due to the increase in anti-poaching initiatives, since a more abundant and easily accessible population of macaques in combination with less control make Khenifra a more favourable environment.

**Picture 3: Poacher shows how to isolate macaques, Khenifra National Park, 2023**



The reasons individuals in these remote areas might be more active in the poaching and trafficking of macaques are intertwined with a combination of opportunity, weak law enforcement,

---

<sup>23</sup> Interview with Barbary macaque expert, June 2023.

and socio-economic marginalisation. An absence of alternative job opportunities provides favourable conditions to engage in poaching if the opportunity arises, explained a Moroccan ecologist.<sup>24</sup> For example, when interviewed one poacher showed his house, located on a small hill, with nothing more than a few wooden beams covered with plastic sheets and without electricity and running water. Donkeys were used to transport plastic gallons filled with water from the well to the house. He explained that poaching macaques provides an additional income to provide for his family, and that for a few Dirhams he can make a policeman turn a blind eye and not check the trunk of his car during checkpoints (Picture 3).<sup>25</sup> This illustrates how poverty, social marginalisation, and corruption is embedded in the motivations of poachers surrounding Khenifra National Park.

### 5.1.3 Mount Gourougou

Located in the Northern Rif Mountains, known for Morocco's large-scale cannabis production and illegal migration from sub-Saharan Africa, Mount Gourougou harbours another population of Barbary macaques that has attracted several illegal entrepreneurs. Mount Gourougou overlooks the Strait of Gibraltar and the Alboran Sea and is strategically located near the Moroccan city of Nador and the autonomous Spanish enclave of Melilla in North Africa. The increased anti-poaching activities in Ifrane National Park have also displaced poaching activity to Mount Gourougou. One poacher explained how during the poaching season they arrive with vans and lure monkeys to catch them, exclaiming "It's very easy because there is no control here; no one sees it here!"<sup>26</sup> There are also direct boat connections to the port of Almeria in Spain, and respondents in Alicante explained how Moroccan workers have smuggled infant Barbary macaques in recent years, sometimes as a gift to Spanish employers in the provinces of Almeria and Murcia.<sup>27</sup>

Even though Mount Gourougou has become more attractive for poaching, enforcement has increased since the CITES uplisting. Confiscation data from the National Agency for Water and Forests of Morocco (ANEF) shows that several Barbary macaques were confiscated by law enforcers of Nador in recent years. One poacher in Gourougou who sells macaques for 2,000 Dirhams explained that during the summer season tourists arrive in the area to buy monkeys (Picture 4). He explained how he recently sold one macaque to a Frenchman, but due to the strict controls at the border he was not able to smuggle the macaque past Melilla into Spain.<sup>28</sup> The Frenchman returned the macaque as the poacher explained:

*"A couple days later, after the Frenchman bought the baby monkey from me, he came back. He was stopped by the border police and brought back the monkey. (...) He didn't want his money back, so for me it was fine..."*<sup>29</sup>

---

<sup>24</sup> Interview Moroccan ecologist, September 2023.

<sup>25</sup> Interview with poacher, Khenifra National Park, Morocco, May 2023.

<sup>26</sup> Interview with poacher, Nador, Morocco, October 2023.

<sup>27</sup> Interview with team leader Primadomus and law enforcer in Alicante, Spain, March 2024.

<sup>28</sup> Melilla is an autonomous city of Spain in North Africa.

<sup>29</sup> Interview with poacher, Mount Gourougou, Morocco, October 2023.

**Picture 4: The poaching area at Mount Gourougou, 2023**



In addition to opportunistic entrepreneurs there are also sophisticated networks involved, explained informants. A cannabis trader in Issaguen, one of the biggest cannabis cultivation areas in Morocco (Picture 5), described the smuggling of Barbary macaques in the containers of trucks, and explained how drugs, migrants, and Barbary macaques are moved along the same smuggling routes, converging on and being facilitated by the same illegal infrastructures:

*“This [Northern Rif] is the main cannabis area of Morocco [he takes a drag of his joint and points to the mountains]. We know how to get things done! (...) Migrant smugglers are different, yes, they are with many, everywhere in makeshift camps. It’s another business, but the boats you know. They can be used for everything: drug, migrants, but also those monkeys. Just put them inside; nobody cares.”<sup>30</sup>*

Law enforcement officers in Spain confirmed when controlling containers for illegal migrants with heartbeat detectors, sometimes Barbary macaques are also found.<sup>31</sup> This illustrates how the stricter controls on poaching result not only in crime displacement, but also in the imperative for traders to become more sophisticated in technique and establish relationships with other illegal entrepreneurs to facilitate continued macaque smuggling.

---

<sup>30</sup> Interview with cannabis trader in Issaguen, Morocco, October 2023.

<sup>31</sup> Interviews with law enforcers in Alicante and Madrid, Spain, March 2024.

**Picture 5: Cannabis production near Issaguen, 2023**



## **5.2 Poaching in Algeria**

In Algeria, the Barbary macaque also holds symbolic and cultural influence, reflected in the names of several places, such as the Ruisseau des Singes (the monkey creek) in Chr  a National Park south of Algiers, the Fontaine des Singes (monkey fountain) in Djurdjura National Park, and the Pic des Singes (the monkey peak) in the mountains of Gouraya National Park west of Algiers. The poaching of Barbary macaques in Algeria still takes place in and around national parks, including all those mentioned above (Butynski et al. 2008; Benrabah 2015; IUCN and Direction G  n  rale des For  ts 2019).<sup>32</sup>

---

<sup>32</sup> The Gorges of Chaabet-el-Akhra (B  ja  ) and Yakouren (Akfadou) are also identified as critical locations for illicit trade in Algeria.

### 5.2.1 Chr a National Park

Chr a National Park in the Tell Atlas Mountains of Algeria has long been a hotspot for poaching Barbary macaques. The National Park authorities recorded several poaching incidents between 2008-2014, with the most being recorded in the Chiffa gorges as one of the few habitat areas in Algeria that has a wild population of Barbary macaques. According to confiscations, the average age of a poached macaque in Chr a National Park is 2.6 years old (Benrabah 2015).

The geographic location near Algiers, the capital of Algeria, contributes to the attractiveness of the Chiffa gorges for poachers (Picture 6). Along the Ruisseau des singes (monkey creek) of the Chiffa gorges, Barbary macaques are fed by tourists and are normalised to the presence of humans. According to some respondents, poachers arrive at ‘monkey creek’ with cars and entice the monkeys with cakes and sweets of all kinds. A local informant explained how they catch the monkeys at Chiffa gorges:

*“After gaining confidence, then they grab the young monkeys and put them in a box in the car and disappear. But you have to wait for the right moment, when the group leader of the monkeys is not aware of it. [...] Some of the monkeys are destined abroad for ‘un voyage de singes.’”<sup>33</sup>*

**Picture 6: The monkey creek at Chiffa gorges, 2024**



In Chr a National Park groups of monkeys inhabiting the areas near touristic roads, such as monkey creek at Chiffa gorges, are more likely to be poached than those who do not (Benrabah 2015). Two ecologists from Algeria explained how, in Chiffa gorges, the proximity of the monkeys to human activity contributes to their capture for resale into the pet industry. Professional monkey traders have established close relationships with poachers and live in the nearby town of Blida between Algiers and the Chr a National Park. One respondent explained:

---

<sup>33</sup> Interview with local informant, January 2024.

*“The monkeys are sold to tourists. They have a good time in the park and would like to bring back a monkey from their holiday. But there is also this place called Blida (...) where monkeys are kept by traders, before they are exported [abroad]. They [monkeys] are kept in that house for a while, until they are ready to be smuggled, as they wait for orders.”<sup>34</sup>*

Informants explained how some monkeys from the Chiffa gorges end up as pets in countries as far as France and Spain. They are transported by boats from Algiers and sometimes Oran to ports in Marseille or Alicante. According to experts however, the growing interest in conservation in Algeria in combination with the CITES uplisting means the poaching of Barbary macaques has become more complicated. They explained how new threats are linked to the increase in human populations surrounding Chr  a National Park that have contributed to a rise in infrastructure development in and around these areas. Such developments increase the chances of macaque and human interaction through crop raiding, feeding, and traffic accidents (Benrabah 2015).

## 5.2.2 Djurdjura National Park

Located in Kabylie, Djurdjura National Park is a mountainous coastal region in the Tell Atlas range of northern Algeria. In recent years several poaching incidents have been recorded according to an Algerian ecologist. Informants explained how Barbary macaques are poached with the help of dogs in and around the boundaries of the Djurdjura National Park. According to an ecologist who did research for 30 years in the area it’s unclear if the poaching is increasing or decreasing, but it has shifted location to the boundaries of the park due to more awareness and control in recent years:

*“They take the monkeys and put them into their vehicle, just outside the park. They come and disappear. Despite their protection by Algerian law, for example in Tizi Ouzou, we have reported cases of poaching of baby monkeys or young individuals along the roads by motorists. The problem exists, but we don’t have exact numbers.”<sup>35</sup>*

According to some respondents, important monkey traders are based in the town of Bouira, south of Djurdjura National Park. They have been involved in the business of poaching and trading from the area for years. As explained:

*“Baby monkeys are targeted for the simple reason that they do not weight much and are very light to carry when captured. Several monkeys are in demand from local people, but some monkeys are smuggled to Europe. (...) The animal are then put in baby diapers so that feces are retained by the hydrophilic tape. You know, the monkeys are also drugged with tablets, sometimes even with injections, to put them asleep. This is very important! Everything is well prepared so that the smuggling operation succeeds. The monkeys are then transported to Marseille by boat. (...) There is also a boat from Algiers to Spain, this is to Alicante.”<sup>36</sup>*

In addition to poaching, major threats are linked to the human-wildlife conflicts that have been recorded in villages surrounding Djurdjura National Park, including in the village of Tala N’tazart

---

<sup>34</sup> Interview with Algerian conservation ecologist, March 2024.

<sup>35</sup> Interview with Algerian ecologist, February 2024.

<sup>36</sup> Interview with local respondent, January 2024.

and Tikjda. Respondents explained how local people chase the monkeys, killing them or setting up traps to catch them. An employee of the natural history museum in Tikjda explained:

*“The local people of local towns [in the area surrounding the Djurdjura National Park]. Catching monkeys. Some are lured and captured in a box, while others are hunted and captured. (...) This is not for business or to sell the monkeys, no! Then they take the monkeys to another forest so that they no longer bother human residents.”<sup>37</sup>*

The expansion of human constructions, such as villages, roads and agriculture, brings forth contact with monkey habitats and subsequent incursions by monkeys into urban areas surrounding Djurdjura National Park. This has significant consequences for the relationship between humans and Barbary macaques (Picture 7).

**Picture 7: Barbary macaques plunder food, Tikjda, Djurdjura National Park, 2024**



---

<sup>37</sup> Interview with an employee of the natural history museum in Tikjda, January 2024.

### 5.2.3 Gouraya National Park

The coastal National Park of Gouraya is located in Béjaïa province of Algeria. Historically Béjaïa, a port on the Mediterranean coast, was famous for its veneration and compassion for Barbary macaques (Picture 8). Over the course of time however it became a monkey trading hotspot (Veracini 2020). For example, in the 15<sup>th</sup> century the trade in monkeys practiced by Algerians was common and Barbary macaques were exported from Béjaïa to fuel the demand in Europe (Shemesh 2018).

**Picture 8: Barbary macaque at the ruins overlooking the bay of Béjaïa, 2024**



Gouraya National Park has become a popular attraction, with the Barbary macaques at Pic des Singes (the monkey peak) being amongst the touristic highlights (Picture 9). They are also being poached from the national park. In the past, researchers observed how the rate of baby monkeys under one year old was lower than that observed in wild populations free from poaching pressure (Ménard and Vallet, 1996). Testimonies reporting poaching for trade to Europe and the abnormal ‘disappearance’ rates of baby monkeys have raised questions regarding the significant trafficking of monkeys (IUCN and Direction Générale des Forêts 2019). The last assessment of the Barbary macaque populations in Gouraya National Park revealed a very low number of juveniles (Rabhi 2015). The National Park authorities disclosed that there have been several juvenile Barbary macaques confiscated in Béjaïa province, mostly at road controls. This suggests an increase in trafficking incidents in the area. An Algerian ecologist echoed:

*“The rate of baby monkeys illustrates well the potential impact of poaching in the national park. We know that there are poaching activities!”<sup>38</sup>*

Remarkably, a large proportion of the disappearances of young monkeys took place in August before tourists returned to Europe. According to informants Barbary macaques, worth 30,000 Dinar (+/- 200 EUR), are smuggled from Béjaïa to Marseille.

In addition, some monkeys are taken by local people for commercial purposes, such as paid photography in tourist areas and restaurants (IUCN and Direction Générale des Forêts 2019). Currently, poaching appears to have decreased thanks to the efforts of managers (IUCN and Direction Générale des Forêts 2019). There remain indicators however that poaching activities may have moved to other areas, including the Gorges of Chaabet-el-Akhra.

**Picture 9: Barbary macaque at Pic des Signes, 2024**



---

<sup>38</sup> Interview with an Algerian conservation ecologist, March 2024.

## 6. The Monkey Business

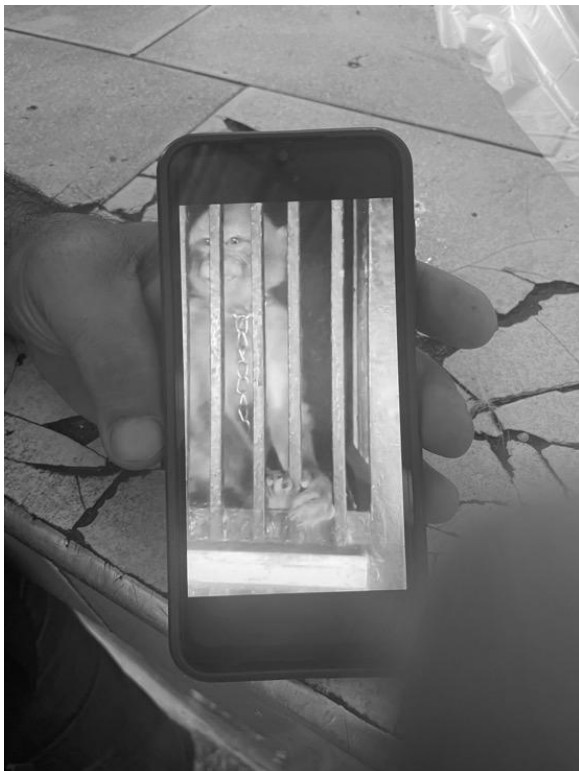
Alongside higher priorities of enforcement in national parks, increased controls at markets have influenced the open trade of Barbary macaques in both Morocco and Algeria. For example, confiscation data from the National Agency for Water and Forests of Morocco (ANEF) illustrates how, after the CITES uplisting, Barbary macaques were seized at markets and parks in different locations across Morocco, including Marrakesh and Oujda and El Hajeb, as well as the coastal towns of Casablanca, Tangier and Nador.

In contrast to 10 years ago, Barbary macaques are rarely sold at open markets in Morocco and Algeria. Even at the souk in Meknes or the medina in Fez, which both used to be trading hubs, no live monkeys were openly offered for sale. The traders explained how they keep monkeys hidden at home, for sale upon request. Traders also clarified that there was a waiting period of a few days to obtain the monkeys as they had to be taken directly from the forest first.<sup>39</sup>

Even though Barbary macaques are only rarely offered for sale at the open markets and the demand is declining, it is still possible to acquire a monkey when asking the right person (Picture 10). One of the poachers in the Azrou area explained how the selling does not take place in public anymore:

*“There is no official market in public, but if you ask somebody to take your monkeys, they will do it secretly and carefully, you know.”<sup>40</sup>*

**Picture 10: Wildlife trader shows Barbary macaque for sale, Casablanca, 2023**



---

<sup>39</sup> Interviews with traders in Casablanca, Fez, Marrakech, Meknes, and Tangier, Morocco, 2023-2024.

<sup>40</sup> Interview with poacher in Azrou, Morocco, May 2023.

The fieldwork revealed the awareness of the illegal sale of Barbary macaques and how opportunistic the market is. A wildlife trader at the pet market in Casablanca showed a Barbary macaque for sale via a video on his phone and stated:

*“Here check this monkey [video], it’s in good condition, only 3,000 Dirhams (...) We don’t have monkeys at the market here (...) due to inspections of the police; otherwise, they can take you to jail.”<sup>41</sup>*

Nevertheless, there have been accounts where Barbary Macaques were openly sold. One instance involved two macaques from the Azrou region in Morocco, offered for sale on the wildlife market in Oujda, priced at 3,000 Dirhams. These young macaques were being kept on a leash to be sold as pets (Picture 11). The seller explained:

*“We got our monkeys from Azrou. It used to be better business, fewer people are interested now, but we still have clients. (...) Sometimes we sell them to local people, sometimes to tourists at the beach resort Saïdia. They pay good money for the monkeys!”<sup>42</sup>*

**Picture 11: Young Barbary macaque for sale at the market in Oujda, 2023**



---

<sup>41</sup> Interview with trader in Casablanca, October 2023.

<sup>42</sup> Interview with trader in Oujda, October 2023.

Additionally, five young Barbary macaques on a market in Tangier in Morocco were being sold for 3,000 Dirhams per monkey. These macaques were purchased from a middleman in Meknes. The seller mentioned that he had problems, since no one seemed to be interested in purchasing the macaques:

*“I bought these monkeys from my friend in Meknes, but I have returned them to him. I want to have my money back, but he uses a trick. He says that he has clients in Meknes and once he sells the monkeys he will pay me, you understand? This is Moroccan business!”<sup>43</sup>*

Similar to Morocco, Barbary macaques were rarely offered for sale in open markets in Algeria. Barbary macaques were openly sold at local wildlife markets in Tlemcen - near the Moroccan border – and Setif near the Babor mountains. Picture 12 shows a trader in Blida, near Chiffa gorges, offering a female Barbary macaque for sale. The trader explained how the monkey is calm and sociable and therefore the price is about 30,000 Dinar. He explained how a monkey with the same age, but with a “turbulent” character, would cost about 10,000 Dinar. The monkey trader eventually fled, evading controls, and later even posted an advertisement online for the sale of their monkeys.

**Picture 12: Barbary macaque for sale at Blida, 2023**



Due to the decreased demand from Europe, more awareness, and increased enforcement in recent years, the trade in Barbary macaques has declined, as illustrated by confiscation data, interviews and observations. However, respondents explained how traders of Barbary macaques instead explore the national markets by offering Barbary macaques to local people and online (see also, Bergin et al. 2018). In Morocco in particular there seems to be an increased local demand for

---

<sup>43</sup> Interview with trader in Tangier, October 2023.

Barbary macaques according to experts; the monkey dealers transformed their focus from European demand to local demand for monkeys as pets.

## 7. Entertainment, Culture and Legislative Loopholes

Whilst keeping a Barbary macaque as a pet is illegal and can lead to fines, there are two squares in Morocco where exhibiting Barbary macaques as a form cultural heritage is tolerated. Macaques are openly displayed and used as photo-props for tourists at the Djeema El-Fna square (ساحة جامع الفناء) in Marrakesh and at the El Hedim square (ساحة الهديم) in Meknes. Since the macaques have been kept in these squares for a long time, their presence is perceived as having historical and cultural significance - and being integral to the community's identity as a representation of their national heritage.

However, in both locations, whilst macaques are used for entertainment purposes they are also secretly being offered for sale at a price of 3,500-4,000 Dirhams, which is slightly higher than the price in other Moroccan cities. Similarly, in Algeria, Barbary macaques are sometimes used for entertainment purposes and dressed up in tourist towns such as the Promenade des Sablettes in Algiers and near the Pic des Singes in Béjaïa. These monkeys are also secretly being sold.

**Picture 13a and 13b: Barbary macaques dressed like human infants at Djeema El-Fna, Marrakesh, 2023**



At the famous Djeema El-Fna square in Marrakech, three groups of macaque keepers display Barbary macaques as photo-props for tips up to 100 Dirhams. A total of 15-21 macaques were observed here, and most were infants from the wild, according to the photo-prop vendors. The photo-prop vendors are in the perfect position to facilitate a covert illegal trade: the monkeys

were being offered for sale and wildlife traders at the local Medina referred to them. One of the photo-prop vendors explained:

*“My friend gets young monkeys from the Atlas, place called Azrou. But he, that other group over there [points to a group of fellow macaque keepers at Djeema El-Fna], they get their monkeys from dealers in Zaouiat Cheikh. These are good traders with plenty of wild monkeys from Khenifra. It is a shorter drive than all the way to Azrou. (...) Of course you can also buy from us! The price is good! What’s your offer? (...) Pay 4,000 Dirhams, my friend.”<sup>44</sup>*

This link between the photo-prop vendors and illegal trade has also been explained by an expert:

*“In Djeema El-Fna monkeys have been freshly introduced. (...) In Marrakesh, the people on the square are still in business; locally, they are known as the traders. Anyone you ask where to get a monkey will point you to these boys.”<sup>45</sup>*

At the El Hedim square of Meknes six macaques, including four infants, were observed. For most of the day the macaques were kept in small boxes on the parking lot next to the square. For about 2-3 hours they were present on the square, where they were kept on a leash as photo-props for tourists. The macaques wear diapers and are trained to be accustomed to humans so they will pose on a person’s shoulders or arms whilst someone takes a picture. One of the macaque owners explained:

*“It’s a family business. My grandfather in Marrakesh. My brothers are at the square in Meknes, others are here. We train them and play with the monkeys for the people! We have been here to entertain people, yes, for decades already. (...) We have them with permission of the government; they count the monkeys and know they are here. But if you sell them, you can go to prison! You see, they are all vaccinated, we keep these official papers [points at the paperwork] To have these papers, you need to be a spectacle man with long experience.”<sup>46</sup>*

The macaque owners in Meknes showed permits for each macaque which featured a photo, birthday, and vaccination date. However, it’s difficult to verify if the macaques were legitimately registered (Picture 14).

---

<sup>44</sup> Interview with prop vendor at Djeema El-Fna, Marrakesh, October 2023.

<sup>45</sup> Interview with Barbary macaque expert, Rabat, April 2023.

<sup>46</sup> Interview with prop vendor, Meknes, May 2023.

**Picture 14: Barbary macaque papers, Meknes, 2023**



The open presence of macaques as a form of cultural heritage can be seen as a legislative loophole that is countering the criminalisation (Nijman et al. 2015; Stazaker and Mackinnon 2018). Where on the surface the macaques are permitted to be kept as photo-props, they are also covertly sold from and through these locations. Criminalising the trade of the species, whilst simultaneously leaving space for this legislative loophole seems counter intuitive for the means implemented to conserve the species.

## **8. Conservation and Awareness Programs**

Before the Barbary macaque was listed on CITES Appendix I, several NGOs were actively involved in their conservation efforts in Morocco. Already in 1973, a 15-month longitudinal research project took place, which focused on the behaviour of the Barbary macaque and showed how wild populations were under threat due to habitat destruction and infant poaching in Morocco and Algeria (Taub 1977). After this report, the governments invited the researchers to advise on wildlife management and conservation programs, but later the projects were put on hold due to budget related problems (Taub 1978). The urgency of the protection of the wild populations of Barbary macaques was reinforced by several research findings in the 1980s, 1990s, and 2000s and initiatives to protect the Barbary macaque populations started to develop (Fa 1984; Camperio Ciani et al. 2005).

Several NGOs concerned with the general protection of the Barbary macaque began raising the issue, including WWF Morocco and the Association Marocaine pour l'Ecotourisme et la Protection de la Nature. NGOs specifically concerned with the protection of the Barbary macaques were subsequently founded, including the Moroccan Primate Conservation Foundation (MPC) in 2003 and the Barbary Macaque Conservation in the Rif (BMCRif) in 2004, with a focus on monitoring

Barbary macaques, advocating for regulations, and training rangers. In 2012, they created and published the Conservation Action Plan for the Barbary Macaque for Morocco (MPC, 2012). In 2018, a Conservation Action Plan for the Barbary Macaque for Algeria has been published (IUCN and Direction Générale des Forêts 2019). The efforts of NGOs were essential in the conservation of the Barbary macaque population and their habitat; they acted as moral entrepreneurs, lobbying for amendments to the legal status of hunting and trading Barbary macaques and conducting awareness programs at local and international levels (Nadelmann 1990).

Currently, the conservation projects initiated by MPC and BMCRif continue in collaboration with other organizations. In 2010, the Barbary Macaque Conservation in the Rif (BMCRif) began receiving support from the Barbary Macaque Awareness & Conservation (BMAC) program. BMAC concentrates on educating local communities in the Rif region about Barbary macaque conservation, particularly in the forests of Bouhachem Natural Park. Since February 2019, they have visited 19 schools, seven located in Tétouan and 12 in villages surrounding the Barbary macaque habitat, reaching an estimated +/- 6,000 pupils (BMAC 2019). Furthermore, the program collaborates with forestry departments and local police to address issues such as illegal possession of macaques and smuggling. They work together with the Department of Forestry and local police to provide information on illegally kept macaques. In 2019, a total of 16 cases of illegally kept macaques were reported to the NGO, which they then reported to the police.

Similarly, in 2017 the Moroccan Primate Conservation Foundation (MPC) transitioned its efforts to the Born to be Wild project, which involves a collaboration between Stichting AAP, the International Fund for Animal Welfare (IFAW), and the Moroccan government. This project aims to advocate for further protection of the Barbary macaque by focusing on academic research and identifying the key threats to the species' survival, training more scouts, and providing educational programs for local communities. The project collaborated with the Moroccan National Agency for Water and Forests (ANEF) in the DISRUPT and LAST programs to better train and inform police, border control agents, and prosecutors on the best practices for seizing and confiscating macaques successfully. As such, they provide educative sessions on how to handle and care for confiscated macaques during captivity, and provide instruction on the practical methods for capturing, restraining, and immobilizing macaques that could be used in different kind of situations. In addition to these initiatives, they also offer educational programs for local schools to enhance awareness amongst the local communities. As of 2020, they have provided educational programs on the Barbary macaques in over 30 schools surrounding the Ifrane National Park and in 2023 they have opened a rehabilitation centre for confiscated macaques in Tazekka National Park. The purpose of this rehabilitation centre is to reintroduce the confiscated macaques to this national park as a means to conserve the species.

## Conclusion

Over the past decades, the wild population of Barbary macaques has been declining at a rate of 50%, due to poaching, habitat destruction, and human-wildlife conflicts. To restrict the international trade of the species, the Barbary macaque was uplisted on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 2017. With its inclusion in Appendix I, the species receives protection under the highest international trading restrictions for endangered species. This research examined the current nature of the illegal trade in Barbary macaques based on both quantitative analyses of confiscation data and

the requests for shelter in Europe, and interviews with respondents directly or indirectly involved in Morocco, Algeria and Spain. Longitudinal trends in confiscations and requests for shelter in rescue facilities have shown a gradual decline of 90% in confiscations and a 60% decline in requests for rescue centres between 2006-2022. Since the declining confiscations and requests for shelter data shows a decrease of more than two-third in comparison to the numbers of 2010, by extrapolation the illegal trade of Barbary macaques to Europe could potentially be around 100 monkeys each year. Ethnographic fieldwork in trade hotspots supported these declining trends, where poaching and trading activities appear to have been reduced. However, signals of crime displacement to neighbouring regions and emerging local markets leave space for a remaining opportunistic illegal trade in Barbary macaques. In addition, the legal exemption of macaques as cultural heritage in tourist hotspots seems to be linked to a covert illegal trade, which is counter-effective to the conservation strategies being implemented. The report concludes that there appears to be an overall reduction in poaching and trade of the monkeys compared to the situation before the uplisting. Solely ascribing this to the CITES uplisting is however too narrow-sighted, due to its intertwined relation with community awareness and engagement projects being initiated by governmental and non-governmental organizations. It is the dynamic interplay between criminalisation through legal frameworks and community-driven initiatives that has contributed to the reduction in poaching and trafficking of the Barbary macaque.

**Picture 15: Baby Barbary macaque, Ifrane National Park, 2024**



## Literature

- Ahmim, M., & Labiod, A. (2020). New Data on the Current Distribution of Barbary Macaque *Macaca sylvanus* (Mammalia: Cercopithecidae); Algeria. *Science Journal of Applied Mathematics and Statistics*, 8(4), 47.
- Bailey, J. F., Henneberg, M., Colson, I. B., Ciarallo, A., Hedges, R. E., & Sykes, B. (1999). Monkey business in Pompeii-unique find of a juvenile Barbary macaque skeleton in Pompeii identified using osteology and ancient DNA techniques. *Molecular Biology and Evolution*, 16, 1410–1414.
- Barr, R., & Pease, K. (1990). Crime Placement, Displacement, and Deflection. *Crime and Justice*, 12, 277–318.
- Benrabah, M. E. (2015). Ecology and conservation genetics of the Barbary macaque (*Macaca sylvanus*) in Algeria. University of Lincoln, UK.
- Becker, S. H. (1963). *Outsiders: Studies in the Sociology of Deviance*. The Free Press.
- Bergin, D. (2019). *Wildlife Trade in Morocco: Use, Conservation, Laws and Welfare*.
- Bergin, D., Atoussi, S., & Waters, S. (2018). Online trade of Barbary macaques *Macaca sylvanus* in Algeria and Morocco. *Biodiversity and Conservation*, 27, 531–534.
- Blundell, A. G., & Mascia, M. B. (2005). Discrepancies in reported levels of international wildlife trade. *Conservation Biology*, 19(6), 2020–2025.
- BMAC. (2019). *BMAC Annual Report 2019*. BMAC.
- Bows, H. (2020). Methodological Approaches to Criminological Research. In P. Davies & P. Francis (Eds.), *Doing Criminological Research*. Thousand Oaks.
- Brame, R., Turner, M. G., & Paternoster, R. (2010). Missing Data Problems in Criminological Research. In *Handbook of Quantitative Criminology* (pp. 273–288). Springer New York.
- Broad, S., Luxmoore, R., & Jenkins, M. (Eds.). (1988). *Significant trade in wildlife: Mammals (Vol. 1)*. Cambridge: IUCN.
- Burton, C., Cowan, D., & Moreto, W. (2020). Wildlife crime, a situational crime prevention perspective. In *Routledge International Handbook of Green Criminology* (pp. 68–78). Routledge.
- Butynski, T. M., Cortes, J., Waters, S., Fa, J., Hobbelink, M. E., Van Lavieren, E., et al. (2008). *Macaca sylvanus*. *IUCN Red List of Threatened Species*. Gland: IUCN.
- Camperio Ciani, A. (1986). La *Macaca sylvanus* in Marocco: soprav- vivenza o estinzione. Osservazioni personali e dati storico-demog- rafici. *Antropologia contemporanea*, 9(2), 117–132.
- Camperio Ciani, A. (2003). *Antropol. Mediterran*, 1, 57–68.
- Camperio Ciani, A., & Mouna, M. (2006). Human and environmental causes of the rapid decline of *Macaca sylvanus* in the Middle Atlas of Morocco. In: *The Barbary Macaque: Biology, management and conservation*. Nottingham: Nottingham University Press.
- Camperio Ciani, A., Palentini, L., Arahou, M., Martinoli, L., Capiluppi, C., & Mouna, M. (2005). Population decline of *Macaca sylvanus* in the middle atlas of Morocco. *Biological Conservation*, 121, 635–641.

- Campbell, L. A. D. (2019). Fostering of a wild, injured, juvenile by a neighbouring group: implications for rehabilitation and release of Barbary macaques confiscated from illegal trade. *Primates*, 60(4), 339–345.
- Campedelli, G. M., Favarin, S., Aziani, A., & Piquero, A. R. (2020). Disentangling community-level changes in crime trends during the COVID-19 pandemic in Chicago. *Crime Science*, 9(1).
- CITES (2016) Consideration of Proposals for Amendment of CITES Appendices I and II. Geneva: CITES.
- Duff, R. A., Farmer, L., Marshall, S. E., Renzo, M., & Tadros, V. (2010). *The Boundaries of the Criminal Law*. Oxford University Press.
- Elton, S., & O'Regan, H. J. (2014). Macaques at the margins: the biogeography and extinction of *Macaca sylvanus* in Europe. *Quaternary Science Reviews*, 96, 117–130.
- Elliott, L. M., & Schaedla, W. H. (2016). *Handbook of Transnational Environmental Crime*. Edward Elgar Publishing.
- Fa, J. (1984). *The Barbary Macaque: A Case Study in Conservation*. Springer US.
- Fa, J. E., Taub, D. M., Menard, N., & Stewart, P. J. (1984). The Distribution and Current Status of the Barbary Macaque in North Africa. In *The Barbary Macaque* (pp. 79–111). Springer US.
- Fa, J. E. (1981). The apes on the Rock. *Oryx*, 16(1), 73–76.
- Gibbs et al. (2007) Rhesus Macaque Genome Sequencing and Analysis Consortium Evolutionary and biomedical insights from the rhesus macaque genome. *Science* 316: 222–234.
- Goudsmit, J., & Brandon-Jones, D. (1999). Mummies of olive baboons and Barbary macaques in the Baboon Catacomb of the Sacred Animal Necropolis at North Saqqara. *The Journal of Egyptian Archaeology*, 85, 45–53.
- Haut Commissariat aux Eaux et Forêts et à la Lutte Contre la Désertification. (2012). *Conservation action plan for the Barbary macaque (Macaca sylvanus) in Morocco*. Rabat: Eaux et Forêts.
- Hughes, J. D. (2003). Europe as consumer of exotic biodiversity: Greek and Roman times. *Landscape Research*, 28(1), 21–31.
- Janson, H. W. (1952). *Apes and Ape Lore: In the Middle Ages and the Renaissance (Vol. 20)*. London: Warburg Institute, University of London.
- Lilly, A. A., & Mehlman, P. T. (1993). Conservation update on the Barbary macaque. Declining distribution and population size in Morocco. *American Journal of Primatology*, 30(4), 327.
- Lindburg, D. G. (1980). *The Macaques: Studies in ecology, behavior, and evolution*. New York: Van Nostrand Reinhold.
- Majolo, B., & Maréchal, L. (2021). Barbary Macaque *Macaca sylvanus* (Linnaeus, 1758), In *Handbook of the Mammals of Europe* (pp. 1–26).
- Majolo, B., van Lavieren, E., Maréchal, L., MacLarnon, A., Marvin, G., Qarro, M., & Semple, S. (2013). Out of Asia: The singular case of the Barbary macaque. In *The Macaque Connection: Cooperation and Conflict between Humans and Macaques*. Springer.
- McCormick, F. (1991). The dog in prehistoric and Early Christian Ireland. *Archaeology Ireland*, 7–9.

McDermott, W. C. (1936). The ape in Roman literature. *Transactions and Proceedings of the American Philological Association*, 67, 148–167.

Ménard, N., Rantier, Y., Foulquier, A., Qarro, M., Chillasse, L., Vallet, D., ... & Butet, A. (2014). Impact of human pressure and forest fragmentation on the endangered Barbary macaque *Macaca sylvanus* in the Middle Atlas of Morocco. *Oryx*, 48(2), 276-284.

Ménard, N., & Vallet, D. (1993). Dynamics of fission in a wild Barbary macaque group (*Macaca sylvanus*). *International Journal of Primatology*, 14(3), 479–500.

Ménard, N., & Vallet, D. (1996). Demography and ecology of Barbary macaques (*Macaca sylvanus*) in two different habitats. In J. E. Fa & D. G. Lindburg (Eds.), *Evolution and ecology of macaque societies*. Cambridge: Cambridge University Press.

Meziane, B., Taibi, A., & Mairif, M. (2022). Biodiversity and nesting success of waterbirds at the Bougara Dam (Tissemsilt, North-West of Algeria). *Ukrainian Journal of Ecology*, 12(1), 40–50. [https://doi.org/10.15421/2022\\_333](https://doi.org/10.15421/2022_333)

Modolo, L., Salzburger, W., & Martin, R. D. (2005). Phylogeography of Barbary macaques (*Macaca sylvanus*) and the origin of the Gibraltar colony. *Proceedings of the National Academy of Sciences*, 102, 7392–7397.

Mouna, M., & Camperio Ciani, A. (2006). Distribution and demography of the Barbary Macaque (*Macaca sylvanus* L.) in the wild. *The Barbary Macaque: Biology, management and conservation* (pp. 239–256). Nottingham: Nottingham University Press.

Musante DeWalt, K., & DeWalt, B. (2011). *Participant observation: A guide for fieldworker*. AltaMira Press.

Nadelmann, E. A. (1990). Global prohibition regimes: the evolution of norms in international society. *International Organization*, 44(4), 479–526.

Nijman, V., Bergin, D., & van Lavieren, E. (2015). Barbary Macaques exploited as photo-props in Marrakesh's punishment square. *Swara*, 38-41.

Perez-Vincent, S. M., Schargrotsky, E., & García Mejía, M. (2021). Crime under lockdown: The impact of COVID-19 on citizen security in the city of Buenos Aires. *Criminology & Public Policy*, 20(3), 463–492.

Petrossian, G. A., Pires, S. F., & van Uhm, D. (2016). An overview of seized illegal wildlife entering the United States. *Global Crime*, 17 (2), 181–201.

Piquero, A., & Weisburd, D. (2010). Handbook of Quantitative Criminology. In A. R. Piquero & D. Weisburd (Eds.), *Handbook of Quantitative Criminology*. Springer New York.

Pires, S. F., & Moreto, W. D. (2011). Preventing Wildlife Crimes: Solutions That Can Overcome the “Tragedy of the Commons.” In *European Journal on Criminal Policy and Research*, 17, 2, 101–123.

Rabhi 2015

Radhakrishna, S., Huffman, M. A., & Sinha, A. (2012). *The Macaque connection: Cooperation and conflict between humans and macaque*. New York: Springer.

Ross, J.F. (2004). La forêt de l'Atlas menacée par les singes? *Courrier International* No. 712, 24-30.

- Sax, B. (2001). *The mythical zoo. An encyclopedia of animals in world myth, legend and folklore*. Santa Barbara: ABC Clio.
- Scheffrahn, W., Menard, N., Vallet, D., & Gaci, B. (1993). Ecology, demography, and population genetics of Barbary macaques in Algeria. *Primates*, 34(3), 381–394.
- Sherman, L. W., Gottfredso, D., Mackenzie, D., & Eck, J. (1997). *Preventing Crime: What Works, What Doesn't, What's Promising*. Diane Publishing Co.
- Shemesh, A. O. (2018). 'There is no concern of prohibition against their trade': A responsum by Rashbatz on the trade in monkeys practiced by Algerian Jews in the Middle Ages. *HTS Teologiese Studies/Theological Studies*, 74(1).
- Taub, D. M. (1975). Notes and News. *Oryx*, 13, 229.
- Taub, D. M. (1977). Geographic distribution and habitat diversity of the Barbary Macaque (*Macaca sylvanus* L.). *Folia Primatologica*, 27, 108–133.
- Taub, D. M. (1978). The Barbary macaque in North Africa. *Oryx*, 14(03), 245–253.
- UNODC (2024) World Wildlife Crime Report. UNODC.
- IUCN and Direction Générale des Forêts (2019). *Stratégie et plan d'action pour la conservation du magot (Macaca sylvanus) en Algérie 2018-2027*. Gland, Suisse et Malaga, Espagne, Alger, Algérie : UICN/DGF
- Van Lavieren, E. (2008). The illegal trade in Barbary macaques from Morocco and its impact on the wild population. *Traffic Bulletin*, 21, 123–130.
- Van Lavieren, E., & Wich, S.A. (2010). Decline of the Endangered Barbary macaque *Macaca sylvanus* in the cedar forest of the Middle Atlas Mountains, Morocco. *Oryx*, 44(1), 133–138.
- Van Uhm, D.P. (2014). *Illegal Trade in Barbary Macaques*. Utrecht: Utrecht University.
- Van Uhm, D. P. (2016a). *The Illegal Wildlife Trade, Inside the World of Poachers, Smugglers and Traders*. New York: Springer.
- Van Uhm, D. P. (2016b). Monkey Business: The Illegal Trade in Barbary Macaques. *Journal of Trafficking, Organized Crime and Security* 2(1): 36–49.
- Van Uhm, D. P. (2018). Talking about Illegal Business: Approaching and Interviewing Poachers, Smugglers, and Traders. In *Wildlife Crime: From Theory to Practice* (pp. 173–196). Philadelphia: Temple University Press.
- Van Uhm, D.P. (2023). *Organized Environmental Crime: Black Markets in Gold, Wildlife, and Timber*. New York: Bloomsbury.
- Van Uhm, D.P., Pires, S.F., Sosnowski, M. and Petrossian, G.A. (2019) A comparison of seizures of illegal wildlife between the US and the EU. In *Quantitative Studies in Green and Conservation Criminology: The Measurement of Environmental Harm and Crime* (pp. 127–145). Routledge.
- Van Uhm, D. P., & Zaitch, D. (2021). Defaunation, Wildlife Exploitation and Zoonotic Diseases. In *Notes from Isolation: Global Criminological Perspectives on Coronavirus Pandemic*. The Hague: Eleven International Publishing.

Veracini, C. (2020). A landscape without nonhuman primates? The case of the Barbary macaque, *Macaca sylvanus*, (Linnaeus, 1758) and its interaction with humans throughout recorded time. *Humanities*, 9(3), 92.

Von Segesser, F., Ménard, N., Gaci, B., & Martin, R. D. (1999). Genetic differentiation within and between isolated Algerian subpopulations of Barbary macaques (*Macaca sylvanus*): Evidence from microsatellites. *Molecular Ecology*, 8(3), 433–442.

Waters, S. (2011). Europe's other primate. *ZooQuaria*, 75, 22–23.

Waters, S., El Harrad, A., Bell, S., & Setchell, J. M. (2019). Interpreting people's behavior toward primates using qualitative data: A case study from North Morocco. *International Journal of Primatology*, 40, 316–330.