1	Online trade of Barbary macaques Macaca sylvanus in Algeria
2	and Morocco
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15	With the rise in popularity and accessibility of the internet, a growing number of people are
16	selling goods online. Classified advertisement websites such as eBay, Gumtree and Craigslist
17	allow users to sell goods or services directly to consumers, bypassing the need for an
18	intermediary. The convenience, anonymity and widespread reach of these websites has led
19	to an increase in legal and illegal wildlife being traded online (IFAW 2014; Lavorgna 2014,
20	2015). Sellers advertise illegal wildlife openly as there is little need to resort to darkweb sites
21	(Harrison et al. 2016). Recent reports indicate that the trade of prohibited animals online is
22	flourishing, and is a cause of conservation concern for a broad range of species (IFAW 2014;
23	Hinsley et al. 2016; Morgan and Chng 2017).
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25	The Barbary macaque (Macaca sylvanus) is considered Endangered by the International Union
26	for Conservation of Nature (IUCN) and was upgraded to the Convention on International Trade

27 in Endangered Species of Wild Fauna and Flora (CITES) Appendix I in January 2017, with 28 offtake for the illegal pet trade noted as one of the significant factors contributing to their 29 decline in the wild (Anon 2016). Once present throughout North Africa, the range of this 30 species is now limited to Algeria, Morocco, and a small, introduced population in Gibraltar 31 (Taub 1984). Legislation in both Morocco and Algeria prohibits the trade in Barbary macaques, 32 with potential fines of up to USD10,000 per animal in Morocco and USD1,000 in Algeria. There 33 is evidence that the species has been traded since at least the early Iron Age (Massetti and 34 Bruner 2009) and previous studies have noted the presence of a domestic trade in Barbary 35 macaques in Morocco (van Lavieren 2008; Nijman et al. 2015; Waters et al. 2016) and Algeria 36 (Sabrina 2008) but no assessment of the online trade has been conducted in either country.

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We investigated popular Moroccan and Algerian classified advertisement websites for a six month period, from 1<sup>st</sup> of January 2017 to 1<sup>st</sup> of July 2017, searching for trade in Barbary macaques. We searched eight websites in Morocco and four in Algeria using search terms in English, French and Arabic (i.e. monkey, macaque, singe, magot, قرد) and browsed their 'pet' and/or 'miscellaneous' sections. We collected information on the, age, price and description of the macaques, as well as locations and other goods offered by the seller. The number of views received by each advertisement was used as a metric for a post's popularity.

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As is the case with any online advertisements, there is no certainty that the seller is actually in possession of the product at the time of advertising; there is a chance that it is a scam. However, the presence of photos in most cases – different for each advertisement and not found on an online reverse image search – indicates a likelihood that the sellers were in possession of the monkeys. It is therefore assumed that they are selling the individuals advertised. They my also be using the advertisement as a 'pre-order' after which they then source the monkeys. Eight Barbary macaques were found for sale as pets on two websites (see Table 1). One macaque was on Marocannonces.com, a website aimed at Moroccan customers and seven were on the Algerian website Ouedkniss.com. All macaques were being sold by different sellers. Other goods advertised by these sellers ranged from dogs to property but in only one case included another prohibited animal (a grey parrot *Psittacus erithacus*). The macaques were aged between 3 months old and 4 years old and cost between USD450 and USD600, where prices were given.

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Table 1. Table showing each of the advertisements observed between 01<sup>st</sup> January 2017 and 01<sup>st</sup> July
2017, the website on which it was observed, the date it was uploaded, the city in which the seller
resides, the price, the age of the macaque and other goods on the seller's profile.

Website	Date	City	Price USD	Age	Other goods sold
Ouedkniss	07/01/17	Constantine	600		Not available
Ouedkniss	06/02/17	Algiers	None given	3 months	Farm animals, engines
Ouedkniss	18/04/17	Tizi Ouzou	450	2 years	Property, cars, dogs
Ouedkniss	07/06/17	Oran	460	4 years	Bike parts, tents
Ouedkniss	28/06/17	Msila	None given	9 months	Computers
Ouedkniss	30/06/17	Oran	550	3.5 years	None
Ouedkniss	01/07/17	Alger	None given	9 months	African grey parrot
Marocannonces	28/06/17	Mohammedia	470	3 months	Not available

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66 The view counter for advertisements on Marocannonces was deemed inaccurate as it 67 appeared not to register multiple visits from different computers by the researchers 68 conducting this study. On Ouedkniss, the total views for six advertisements was 7787 over a 69 combined 359 days, though this is not likely to represent individual people as customers will 70 visit multiple advertisements and revisit advertisements at different times. Pages on 71 Ouedkniss gained an average of 10.8 views per day, with no apparent decrease over time. The 72 least popular post observed in the time period did not include any photos, possibly 73 contributing to its lack of success. Five advertisements were removed over the course of the

study. We believe that this action was taken by the sellers as we reported each advertisement
as illegal to the site administrator but no action was taken on the remaining three, one of
which was active for 145 days.

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78 Despite the greater number of classified advertisement websites in Morocco, we found more 79 macaques on the Algerian website Ouedkniss. This corresponds with data collected by the 80 NGO Barbary Macaque Awareness & Conservation (BMAC) from before 2017 that macaque 81 trade is not as popular online in Morocco as it is in markets. Only two reports were received 82 by BMAC of Barbary macaques for sale online in Morocco between 2015-2016 which is in 83 contrast to their consistent presence in market squares, where younger macaques are sold 84 clandestinely to both national and international tourists outside the area of photo tout activity 85 (Waters, S. pers obs). This openness may mean that macaque vendors do not need to sell 86 online. Fewer large open markets, or more sustained efforts from the Algerian government to 87 combat open trade may also have driven the trade online.

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The evident sustained interest in buying and selling Barbary macaques – an Endangered, nationally protected species – online in Algeria is a cause for conservation concern. These advertisements are on the website for many months, indicating a lack of awareness by the authorities and insufficient action to remove the posts by site administrators. We recommend that both the site administrators and the Algerian government address the illegal selling of Barbary macaques online by quickly removing illegally advertised animals from the website and prosecuting those selling them.

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Because we have not included searches on TOR-based forums or social media, this pilot study
does not necessarily provide a comprehensive account of the online trade of Barbary
macaque, but provides a minimum number and highlights an unregulated market. We urge

100 conservationists and government officials to be alert to the shifting trends in wildlife trade

101 and monitor online trade as closely as market trade.

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