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

Nineteenth meeting of the Conference of the Parties
(Panama city, Panama), 14 - 25 November 2022

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of the helmethead gecko, *Tarentola chazaliae,* in Appendix II in accordance with Resolution Conf. 9.24 (Rev. CoP17), as the species satisfies criterion A and B of Annex 2(a): It is known, or can be inferred or projected, that the regulation of trade in the species is necessary to avoid it becoming eligible for inclusion in Appendix I in the near future; and it is required to ensure that the harvest of specimens from the wild is not reducing the wild population to a level at which its survival might be threatened by continued harvesting or other influences.

B. Proponent

Mauritania, Senegal.*

C. Supporting statement

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Squamata

1.3 Family: Phyllodactylidae

1.4 Genus and species or subspecies, including author and year: *Tarentola chazaliae* (MOCQUARD, 1895)

1.5 Scientific synonyms: *Geckonia chazaliae* MOCQUARD 1895

Geckonia malazodes AHL 1930 (invalid emendation)

1.6 Common names:
English: Helmethead gecko, helmeted gecko
French: Gecko casqué
Spanish: Geco de casco
German: Helmkopfgecko

2. Overview

Tarentola chazaliae is classified as Vulnerable in the IUCN Red List, justified by the limited extent of occurrence, a small number of known locations, a continuing and predicted decline in extent and quality of

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its habitat, and decline in mature individuals due to collection for the pet trade (Wilms *et al*. 2013); however, the assessment itself is of 2004 and accordingly outdated.

Its striking helmet, often attractive patterns, and vocal behavior make the helmethead gecko an attractive species for the international pet trade. Accordingly, *T. chazaliae* is regularly found in the pet trade, in relatively high numbers (Ji *et al*. 2020; Wilms *et al*. 2013; UNEP-WCMC 2009; Shiau *et al*. 2006; Auliya 2003), although abundance in trade seems to have declined occasionally (Hamann 2009). A seizure of more than 500 wild-caught helmethead geckos in Sweden in 2018 indicates an ongoing trade in alarmingly high numbers, especially given the species' narrow coastal distribution range and the fact that the species is only known from ten locations, which are suffering from habitat degradation.

Already in 2005 *T. chazaliae* was labelled as a species of concern with regards to the lack of data on imports and the often wild-sourced origin (Affre *et al.* 2005). A listing in CITES Appendix II would ensure a monitoring of international trade in order to prevent ongoing unsustainable offtakes from the wild.

3. Species characteristics

3.1 Distribution

The species' global extent of occurrence is considered to be less than 20,000 km² (Wilms *et al*. 2013).

The helmethead gecko occurs along the coast of western North Africa and lives in three distinct locations on the west coast of North Africa: Morocco, the Non-Self-Governing Territory of Western Sahara and Mauritania (Sow *et al*. 2014; Wilms *et al*. 2013; Harris *et al.* 2010). Cap Blanc in French West Africa is noted as type locality (Mocquard 1895).

In Mauritania, the species has been recorded in the Division of Dakhlet Nouadhibou, in the areas of Nouâdhibou, Cap Blanc and Boû Lanouar (Padial 2006).

Senegal as a range state of the species is controversially discussed: While the IUCN Red List in its assessment of 2004 states: "A record from further south, Dakar in Senegal, represents an erroneous locality, and there are no confirmed records of this species from Senegal (Ineich *et al.* 1998, Padial 2006)", Uetz & Hallermann (2020) still list Senegal as a range state.

It is a coastal lowland species that usually occurs up to 20 km from the coast, and from 0 to 100 m asl. (Wilms *et al.* 2013). Only two few local records more inland, with up to 144 km, are reported, depending on more humid microclimate conditions (Sánchez-Vialas & de Rueda 2016; Geniez *et al*. 2000).

3.2 Habitat

This species is endemic to the Atlantic Coastal Sahara, inhabiting cooler and more humid habitats than other *Tarentola* species. It prefers sandy and rocky soils with large deposits of vegetation and relatively stable temperatures (de Melo 2016; Trape et *al.* 2012), see also Annex 1. *T. chazaliae* shows a strictly terrestrial behavior; nevertheless, it climbs bushes when threatened (Sánchez-Vialas & de Rueda 2016).

This species is found in succulent vegetation on sandy and stony soil in coastal areas, dunes where shelters are available, and rocky plateaus with refuges (de Melo 2016; Wilms *et al.* 2013; Trape *et al.* 2012). In the north of its range, it is particularly associated with low-lying beaches.

3.3 Biological characteristics

This gecko has a nocturnal lifestyle, with adapted eyes, enabling *T. chazaliae* to have some degree of color vision at night and to distinguish between light at different wavelengths (Roth *et al.* 2009). The gecko is said to be one of the very few vertebrate species being able to see colors at night (Kelber & Lind 2010). During the day the animals often hide under rocks or in burrows. *T. chazaliae* is reported to be vocal, with frequent "chirps" and "grunts" as distress calls (Hamann 2009; Gramentz 2005).

Sexual maturity is reached at an age of 12 to 16 months. Females lay between four and five clutches of one to two oval eggs per year (Meiri *et al.* 2011; Ineich *et al*. 1997). The eggs are buried in sand, and hatchling occurs after an incubation period of about 47 days (Wilms *et al.* 2013; Meiri *et al.* 2011).

3.4 Morphological characteristics

The helmethead gecko is of yellow-greyish to red-brownish color and a uniformly light-colored underside, providing a remarkably well camouflage. While some specimens are almost uniform in color, many animals show whitish mid-dorsal spots and transverse brownish bands with dark blotches (Trape *et al.* 2012; Rösler 1995) – see Annex 1. This pigmentation polymorphism is neither sexual nor local, as the different types live together in the same places (Bons & Girot 1974). Juvenile and newborn individuals are similar to adults in coloration and shape, but the helmet is less distinct than in adults (de la Vega 2012).

Tarentola chazaliae is smaller than other species of its genus, with a mean snout-vent length of 63 mm and a total length of 100-110 mm (Meiri *et al*. 2011). It has a disproportionately large head, with a row of conical occipital tubercles that resemble a helmet, giving the species its common name (de Melo 2016). Snout-vent length in hatchlings is 20 mm (Meiri *et al*. 2011). Due to fat reserves along the side the body is compact and can reach a width of 27 mm (Ineich *et al.* 1997). The tail is small and thin; males are somewhat smaller than females. Eyes are large, with a vertical pupil and an upper shield, and nostrils are small (de la Vega 2012).

3.5 Role of the species in its ecosystem

T. chazaliae is carnivorous, active foraging, and feeding on small artropods (Trape *et al.* 2012). It is prey of e.g., adult specimens of the Montpellier snake (*Malpolon monspessulanus*) (Ramos & del Campo 2013).

4. Status and trends

4.1 Habitat trends

There is a continuing decline in the extent and quality of this lizard's habitat due to coastal development, especially in Morocco. Already in 2004, a rampant coastal development and an almost total transformation of this coastal strip was expected to increasingly threaten the northern half of this species' narrow coastal distribution range (Wilms *et al.* 2013).

4.2 Population size

The species is classified in the IUCN Red List as Vulnerable (Wilms *et al.* 2013); however, the assessment itself is of 2004 and accordingly outdated. Of four analyzed *Tarentola* species in a field survey in Northern Morocco *T. chazaliae* showed the lowest number of observations (de Melo 2016).

4.3 Population structure

The species is known from less than ten locations (Wilms *et al.* 2013) and suitable areas are separated from each other by large extensions (de Melo 2016). Three genetic lineages were identified, with their distribution apparently not following a latitudinal gradient (Cardoso 2017).

4.4 Population trends

Total population of the helmethead gecko is decreasing and a continuing decline of mature individuals has been confirmed already in 2004; with future substantial declines predicted (Wilms *et al.* 2013).

4.5 Geographic trends

No data

5. Threats

The IUCN Red List states: " […] there is a continuing decline in the extent and quality of this lizard's habitat due to coastal development and decline in mature individuals [due] to collection for the pet trade. […] This species is threatened in Morocco (almost a third of its range) by urbanization and fragmentation of its coastal habitats; development is ongoing in this area and imminent expansion of development activities threatens areas not currently under pressure. As a result, almost total transformation of this coastal strip is expected in the coming decade. Storm surges are expected to become more violent as sea levels rise, potentially

exposing low-lying beaches to regular flooding that may render them unsuitable for the lizard's persistence. It is also hit by vehicles along the roads." (Wilms *et al.* 2013).

T. chazaliae shows a high sensitivity to climate change and its impacts, particularly due to its specific habitat and microhabitat dependencies. It is assumed that the species is poorly able to adapt to climate change, with low intrinsic capacities to disperse posing a particular problem (Carr *et al*. 2014).

Cisterns have been reported to be death traps for this species (García-Cardenete *et al.* 2014).

6. Utilization and trade

6.1 National utilization

No data

6.2 Legal trade

This species is regularly found in the pet trade, in relatively high numbers and access to sites where the gecko occurs is facilitated by a road running the length of the coastal and near-coastal strip of Morocco and Western Sahara (Wilms *et al.* 2013). Although Egypt is not a range state, specimens labelled as originating from Egypt were imported by the United States (US LEMIS Database 2016).

North America: The species is sold in Canada (for ~ 350 Canadian Dollars/pair) and the US, with some traders openly advertising wild-caught animals and requesting USD200 per adult wild-caught females. Earliest reports on trade were found for 1970 and 1971 (Busack 1974). According to the US LEMIS database, 150 specimens of "*Geckonia chazaliae*" were imported in 2006, 30 in 2007, 670 in 2008, 210 in 2011, and 158 in 2012 (US LEMIS Database 2016). While imports from Germany, the Netherlands, and Jordan were declared as captive-bred, exports from Egypt, which is not a range state, were labeled as wild-caught. The United States exported 376 specimens within the period 2006 to 2012, almost all of them as captive-bred and for most of them Germany was the original source (US LEMIS database 2016). While the LEMIS data indicate a large portion of the imported animals to be captive-bred many US traders in their online classifieds offer adult specimens, which may indicate a wild-caught origin.

In Europe, *T. chazaliae* has been documented on sale at reptile trade fairs at least since 1998 (Auliya 2003). Sales were also recorded during an Internet survey for the EU Commission in 2009 (UNEP WCMC 2009) and in online advertisements for the pet market in Germany within the period Sep 2017-Sep 2018 (Altherr *et al*. 2020). During the online survey in Germany, 72 specimens were recorded, with 59 of unknown origin and 13 labeled as captive-bred; with prices of 40 to 60 Euro per individual (Altherr *et al*. 2020). Traders are from e.g., Germany, Sweden, the United Kingdom, France, Belgium, and Czech Republic. While some traders explicitly offer offspring, a substantial portion of the animals on sale are adult animals, like in the US, which may indicate offtakes from the wild. Many online advertisements looking for this species indicate an ongoing demand.

The species is also available in the exotic pet trade in Asia, e.g., in China (Ji *et al*. 2020) as well as in North and South Taiwan, Province of China (Shiau *et al.* 2006).

6.3 Parts and derivatives in trade

No data

6.4 Illegal trade

The species has been found in illegal trade activities: In March 2018, more than 500 helmethead geckos were part of a seizure in Sweden; 50 of them were given to European zoos, and the remaining animals were killed with liquid nitrogen (The Local 2018). In Australia, the species has been reported in a seizure in New South Wales (Henderson & Bomford 2011).

6.5 Actual or potential trade impacts

According to the IUCN Red List collection of mature individuals for the international pet trade has been identified as a main threat to the species and has already caused decline of the wild population. This species is commonly traded in relatively large numbers, and access to sites where the gecko occurs is

facilitated by a road running the length of the coastal and near-coastal strip of Morocco and Western Sahara (Wilms *et al*. 2013). In a recent risk assessment *T. chazaliae* has also been identified as a species with high risk from the international pet trade (Altherr *et al*. 2020). According to discussions in reptile keeper online fora the helmethead gecko has been once common in the pet trade but has become much harder available (Hamann 2009). The IUCN Red List also states that numbers of the species in the pet trade have declined; it is not known whether this reflects a reduction in demand or whether animals are becoming harder to find (Wilms *et al*. 2013). However, ongoing and recent demand is reflected by many online classifieds.

Already in 2004, the IUCN assessors underline the need of research to determine population size and trade volumes as essential to determine the impacts of harvesting on this species (Wilms *et al*. 2013). Affre *et al.* (2005) also expressed their concern regarding the lack of trade data for non-CITES species of particular concern, explicitly naming *T. chazaliae*.

7. Legal instruments

7.1 National

In Morocco, Law No. 29-05 on the protection of species of wild flora and fauna and control of their business does not only cover CITES species, but via its Category IV also non-CITES species that are categorized as threatened by IUCN. Without a permit any capture, sale, acquirement, or export is prohibited (Bulletin Officiel 2011).

7.2 International

None

8. Species management

8.1 Management measures

While the species exists in some protected areas of Morocco and Mauritania, most of its range remains outside protected areas (Wilms *et al*. 2013). There is no information on dedicated management plans.

8.2 Population monitoring

None

8.3 Control measures

8.3.1 International

None

8.3.2 Domestic

8.4 Captive breeding and artificial propagation

There are few reports on successful long-term captivity and captive-breeding in this species (Hamann 2009; Rösler 1995; Seufer 1988), and demand seems to be higher than supply by traders, as illustrated by the number of online requests. According to one breeder the species was “once quite common in the pet trade, these geckos have become much harder to find. A few breeders are successfully reproducing this species, but others have found them challenging to reproduce” (Hamann 2009). Discussions in online fora, reporting losses of breeding females, indicate such challenges.

8.5 Habitat conservation

The species exists in protected areas in Morocco (e.g., the Oued Massa National Park), in the Banc d'Arguin National Park in Mauritania, and probably in other reserves elsewhere in its range. However, most of its range remains outside protected areas, and is likely to be threatened by development (Sow *et al.* 2014; Wilms *et al.* 2013; Pieh 2006).

8.6 Safeguards

9. Information on similar species

With its distinct helmet, its upper eye shield and its compact body the species is unique and easily to distinguish from other geckos (de la Vega 2012).

10. Consultations

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11. Additional remarks

According to the IUCN Red List assessment research to determine population size and trade volumes are essential to determine the impacts of harvesting on this species (Wilms *et al*. 2013).

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Annex 1: Appearance and habitat of *Tarentola chazaliae*

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