

## Madagascar Chameleons

### **A report to the CITES Animals Scientific Authority of Madagascar by Madagasikara Voakajy and DICE**

Abstract. During a meeting on 1.2.10 the Malagasy Scientific Authority for Animals recommended that 16 species of chameleons be listed as potentially suitable for sustainable trade in line with CITES Article IV:

Résumé. Au cours d'une réunion du 1<sup>er</sup> février 2010, l'autorité scientifique Malgache pour la faune a recommandé que 16 espèces de caméléons soient répertoriées comme étant potentiellement favorables au commerce durable en conformité avec l'article IV de la CITES :

*Calumma boettgeri*, *C. brevicorne*, *C. crypticum*, *C. guillaumeti*, *C. gastrotaenia*, *C. globifer*, *C. marojezense*, *C. oshaughnessyi*, *C. parsoni*, *C. vencesi*, *Furcifer antimena*, *F. campani*, *F. minor*, *F. petteri*, *F. rhinoceratus*, *F. willsii*

On the 6<sup>th</sup> August 2009 the CITES Secretariat wrote to the Management Authority in Madagascar to inform them about the decisions made during the 24<sup>th</sup> meeting of the Animals Committee and the 58<sup>th</sup> meeting of the Standing Committee.

Species belonging to the chameleon genera *Calumma* and *Furcifer*, and the day gecko genus *Phelsuma*, were assessed by a consultant and each taxon was attributed to one of four categories. These categories defined which species were candidates for resumed trade (C3 & C4) and which were unlikely to meet the conditions of Article IV and should not be traded (C1 & C2). Madagascar was sent the annotated species list and encouraged to comment on the taxa listed as C1 and C2. It was also informed of the three conditions set by the Standing Committee pertaining to the trade in C3 and C4 species.

A meeting was then organised by the CITES Management and Scientific Authority (Fauna) in Madagascar during October 2009 to discuss the letter from the Secretariat. It was decided that the Scientific Authority (Fauna) and other experts would review the list of species sent by CITES and a Malagasy organisation (Madagasikara Voakajy) agreed to prepare a report by the end of January 2010.

The Madagasikara Voakajy report was circulated to the Scientific Authority (Fauna) and other experts in Madagascar two weeks before a meeting on 1<sup>st</sup> February 2010 (see supporting documents).

### **General Points from meeting on 1.2.10**

1. Concern was raised by the SA about the lack of recent information on *Calumma* species. Although there have been a number of recent studies on *Furcifer* species (Karsten et al. 2009; Randrianantoandro et al. 2008; Randrianantoandro et al. 2010), data pertaining to *Calumma* were mostly collected over a decade ago (Brady & Griffiths 1999; Jenkins et al. 2003; Jenkins et al. 1999).
2. Concern was raised by the SA about some of the statements on chameleon reproductive capacity in the original chameleon assessment (AC24 Doc. 7.2) because they were based on animals in captivity. Recent evidence indicates that some chameleon species are short lived and there is very little data available on clutch size in the wild (Andreone et al. 2005; Glaw & Vences 2007; Karsten et al. 2008).
3. The SA noted that it would be helpful to establish a procedure for it to recommend moving species between the different C categories to take into account new information.

### **Chameleons**

The information in the table below summarises the C-categories given to each species in the AC24 Doc. 7.2 and the recommendations made by the Madagascar Scientific Authority (Fauna) on 1<sup>st</sup> February 2010.

<b>Species</b>	<b>AC24 Reccom.</b>	<b>Scientific Authority (Fauna): Madagascar</b>	<b>Information available on population size and density</b>	<b>Occurrence in sites from where collection is permitted</b>
<i>C. amber</i>	C1	C1	No	No
<i>C. ambreense</i>	NE	C1	No	No
<i>C. andringitraense</i>	C3	C2	No	Possibly
<i>C. boettgeri</i>	C4	C3	No	Yes
<i>C. brevicorne</i>	C4	C4	Yes	Yes
<i>C. capuroni</i>	C1	C1	No	No
<i>C. crypticum</i>	C4	C4	Yes	Yes
<i>C. cucullatum</i>	C2	C2	No	Yes
<i>C. fallax</i>	C3	C2	No	Probably
<i>C. furcifer</i>	C2	C2	Yes	Probably
<i>C. gallus</i>	C3	C2	No	Probably
<i>C. gastrotaenia</i>	C4	C4	Yes	Yes
<i>C. glawi</i>	C3	C2	No	Possibly
<i>C. globifer</i>	C4	C3	Yes	Yes
<i>C. guibei</i>	C1	C1	No	No
<i>C. guillaumeti</i>	C3	C3	No	Yes
<i>C. hafahafa</i>	C1	C1	No	No
<i>C. hilleniusi</i>	C2	C2	Yes	Yes

<i>C. jeju</i>	C1	C1	No	No
<i>C. linotum</i>	C2	-	-	-
<i>C. malthe</i>	C4	C2	Yes	Probably
<i>C. marojezense</i>	C3	C3	No	Yes
<i>C. nasutum</i>	C4	C4	Yes	Yes
<i>C. oshaughnessyi</i>	C4	C3	Yes	Probably
<i>C. parsonii</i>	C3	C3	Yes	Yes
<i>C. peltierorum</i>	C2	C1	No	No
<i>C. peyrierasi</i>	C1	C1	No	No
<i>C. tsaratananense</i>	C1	C1	No	No
<i>C. tsysorne</i>	C2	C2	No	Probably
<i>C. vatosoa</i>	C2	C2	No	Possibly
<i>C. vencesi</i>	C3	C3	No	Yes
<i>F. angeli</i>	C2	C2	Yes	Yes
<i>F. antimena</i>	C3	C3	Yes	Yes
<i>F. balteatus</i>	C2	C2	No	Yes
<i>F. belalandaensis</i>	C1	C1	No	Yes
<i>F. bifidus</i>	C2	C2	No	Yes
<i>F. campani</i>	C3	C3	Yes	Yes
<i>F. labordi</i>	C2	C2	Yes	Yes
<i>F. minor</i>	C3	C3	Yes	Yes
<i>F. nicosiai</i>	C1	C1	Yes	No
<i>F. petteri</i>	C3	C3	No	Yes
<i>F. rhinoceratus</i>	C3	C3	Yes	Yes
<i>F. timoni</i>	-	C1	No	No
<i>F. tuzetae</i>	C2	C2	No	Possibly
<i>F. willsii</i>	C3	C3	No	Yes

### **C1 species**

AC24 Doc. 7.2 identified nine C1 species. These were retained by the SA and a further three species are recommended to be included in this category

***Calumma ambreese*** because it is only known from one strict protected area

***Calumma peltierorum*** because it is only known from two strict protected areas

***Furcifer timoni*** because it is only known from two strict protected areas

### **C2 species**

AC24 Doc. 7.2 identified 12 C2 species. These were all retained with the exception of *C. peltierorum* (recommended C1) and *C. linotum* was not considered based on Glaw and Vences (2007). The SA recommended that *C. andringitraense*, *C. fallax*, *C. gallus* and *C. malthe* are moved to C2 because of a lack of information about their biology, abundance, distribution and taxonomy.

### **C3 species**

AC24 Doc. 7.2 identified 14 C3 species. The SA recommended that three of these species are moved to C2 (*C. andringitraense*, *C. fallax* and *C. gallus*).

### **C4 species**

AC24 Doc. 7.2 identified 8 C4 species. The SA recommended that three of these species (*C. boettgeri*, *C. globifer* and *C. oshaughnessyi*) are moved to C3 because although they are relatively widespread there is very little information available on population status in the areas from where collection is permitted. The SA also recommended that one species (*C. malthe*) is moved to C2 because it is mostly restricted to protected areas.

**The final list of 16 chameleon species for which Madagascar will work towards delivering non-detrimental findings (the conditions stipulated in the letter of 6.8.09) are as follows:**

*C. boettgeri*, *C. brevicorne*, *C. crypticum*, *C. guillaumeti*, *C. gastrotaenia*, *C. globifer*, *C. marojezense*, *C. oshaughnessyi*, *C. parsoni*, *C. vencesi*

*F. antimena*, *F. campani*, *F. minor*, *F. petteri*, *F. rhinoceratus*, *F. willsii*

The SA noted the strong resemblance between certain C3/C4 species and C1/C2 species and identified the need to develop new resources for the Management Authority to enable the correct determination of species in the trade to ensure that no C1 or C2 species are mistakenly exported. There is therefore a need to develop materials for the *gastrotaenia*, *brevicorne* and *nasutum* groups.

#### **Literature Cited**

- Andreone, F., F. M. Guarino, and J. E. Randrianirina. 2005. Life history traits, age profile and conservation biology of the panther chameleon (*Furcifer pardalis*) at Nosy Be, NW Madagascar. *Tropical Zoology* 18:209-225.
- Brady, L. D., and R. A. Griffiths. 1999. Status assessment of chameleons in Madagascar. IUCN Species Survival Commission, Cambridge.
- Glaw, F., and M. Vences 2007. A fieldguide to the amphibians and reptiles of Madagascar. Third Edition. Vences & Glaw Verlag, Cologne.
- Jenkins, R. K. B., L. D. Brady, M. Bisoa, J. Rabearivony, and R. A. Griffiths. 2003. Forest disturbance and river proximity influence chameleon abundance in Madagascar. *Biological Conservation* 109:407-415.
- Jenkins, R. K. B., L. D. Brady, K. Huston, J. L. D. Kauffmann, J. Rabearivony, G. Raveloson, and M. Rowcliffe. 1999. The population status of chameleons within Ranomafana National Park, Madagascar. *Oryx* 33:38-47.
- Karsten, K. B., L. N. Andriamandimbarisoa, S. F. Fox, and C. J. Raxworthy. 2008. Discovery of a unique tetrapod life history: and annual chameleon living mostly as an egg. *Proceeding of the National Academy of Sciences* 105:8980-8984.
- Karsten, K. B., L. N. Andriamandimbarisoa, S. F. Fox, and C. J. Raxworthy. 2009. Population densities and conservation assessments for three species of chameleons in the Toliara region of south-western Madagascar. *Amphibia-Reptilia* 30:341-350.
- Randrianantoandro, J. C., R. Randrianavelona, R. R. Andriantsimanarilafy, H. E. Fidelity, D. Rakotondravony, M. Randrianasolo, H. L. Ravelomanantsoa, and R. K. B. Jenkins. 2008. Identifying priority areas for dwarf chameleon (*Brookesia*

spp.) conservation in Tsingy de Bemaraha National Park, Madagascar. *Oryx* 42:578-573.

Randrianantoandro, J. C., B. Razafimahatratra, M. Soazandry, J. Ratsimbazafy, and R. K. B. Jenkins. 2010. Habitat use of chameleons in a deciduous forest in western Madagascar. *Amphibia-Reptilia* 31:27-35.