CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To include *Brookesia perarmata* (Angel 1933) in Appendix I of CITES, in accordance with Article II, paragraph 1, of the Convention and Resolution Conf. 9.24, Annex 1, sections B. i) and iii), and C. i) and ii) (second point).

B. Proponent

Madagascar.

C. Supporting statement

The dwarf spiny chameleon (*Brookesia perarmata*) is endemic to Madagascar and is localized exclusively in the complex of the Tsingy de Bemaraha Protected Areas (Tsingy de Bemaraha Strict Nature Reserve and National Park No. 7) (Glaw & Vences, 1994; Ramilison & Rabibisoa, 1998; Goodman, 2001). This species is in danger of extinction and has ecologically vulnerable status as classified by IUCN (2000). The nature of the threat consists of dwindling population numbers due both to harvesting for commercial purposes and to the destruction of its habitat (and possibly natural fluctuation, as well) (Ramilison & Rabibisoa, 1998, 1999, 2000). However, despite this, this taxon is not yet listed in any of the CITES Appendices. The Bemaraha Programme is conducting a study of the population to ensure the conservation of this species, and recommends its inclusion in Appendix I of CITES.

1. Taxonomy

1.1 Class: Reptilia

1.2 Order: Squamata

1.3 Family: Chamaeleonidae

1.4 Species: *Brookesia perarmata (*Angel, 1933)

1.5 Scientific synonyms: *Leandria perarmata*

1.6 Common names:
French:
English: Armoured leaf chameleon or Dwarf spiny chameleon
Spanish:
Malagasy: Ramilaheloka

1.7 Code number:

2. Biological parameters

B. perarmata is one of the large *Brookesia,* (also called dwarf chameleons) and can attain a length of 150 mm (P. Necas, *personal communication*, in Carpenter, A., 2002). Colouration is generally drab. Juveniles are light brown in colour. The male is smaller and lighter in colour than the female (Giovanni & Riccardo, 1997, in Rabibisoa & Ramilison, 1998).

The body is very spiny except for the ventral portion and the tip of the pelvic region (Glaw & Vences, 1994). This species is easily recognized by bilateral lines of spines on the dorsal surface and a crest of spines in rosette form on the head (M. Yankee and E. Pollak, 2002, adapted by Carpenter, 2002).

Reproduction begins in the month of November. Optimal sexual activity occurs in February and the post-reproductive period is in mid-March and April (Rabibisoa & Ramilison, 2000). Over the course of one biological year, the adult female has only one clutch, comprising two eggs. Maturation and incubation of the eggs are very rapid, as with all dwarf chameleons (Ferguson, 1993, in Rabibisoa & Ramilison, 2000). The same author also reports a very high mortality rate.

2.1 Distribution

Country of origin Madagascar

Distribution: The site of the Tsingy de Bemaraha National Park is in the sub-prefecture of Antsalova in the autonomous province of Mahajanga. Distribution is limited in the northern part of the park beyond the Beboka River. The Bendrao forest is the southern boundary of distribution and the present boundary on the north is the Bevary forest. Andranopasazy and Andranondahy also exhibit these species (Rabibisoa & Ramilison, 1998; Goodman, 2001; Bartlett and Bartlett, 1995).

2.2 Habitat availability

The species is found in dense forest associated with the sub-humid microclimate, with light underbrush dominated by shrubs and young shoots and a nearly closed canopy which creates moderate warmth (Rabibisoa & Ramilison, 1998; Goodman, 2001). The altitude varies from 170-510 m (CAMP, 2001).

2.3 Population status

Since 2000, its IUCN status is Vulnerable (VU) based on the A.1.d) and D.2 criteria (1966) (IUCN, 2000).

The extent of occurrence of the subpopulations varies from 101-5,000 km^2 (CAMP, 2001). The area of occupancy, on the other hand, is from 11 to 500 km^2. The distribution of the four sub-populations now extant is fragmented and tributary (Rabibisoa & Ramilison, 1998, 1999, 2000). The anticipated rate of population loss over four years is 10-19 per cent (CAMP, 2001). Therefore, the CAMP evaluators have proposed that the status Near Threatened (NT) be assigned to this species, in line with the B.2.a) iii) criteria.

2.4 Population trends

In the opinion of the specialists at the CAMP scientific workshop (2001), the population exhibits a downward trend, although the actual rate of decrease is not known at this time.

2.5 Geographic trends

Presence of the species to the north of the sites already surveyed remains a possibility up to the boundary of the karst formation of the Strict Nature Reserve (Raxworthy, *personal communication*). However, this view is not confirmed by studies carried out by the Bemaraha Programme (1999, 2000).

2.6 Role of the species in its ecosystem

Like all species of chameleons, *B. perarmata* is insectivorous (Brygoo, 1978).

2.7 Threats

Illegal harvesting threatens adults and juveniles at the Andranopasazy site, especially in the months of December and January (Rabibisoa & Ramilison, 1998, 1999, 2000; Bemaraha Programme, 2002).

One of the harvesters orders up to 300 specimens of this species (Rabibisoa & Ramilison, 1999). There is also the effect of growth on the ground where the chameleon lives and destruction of the forest, giving rise to characteristics of sparse underbrush and open canopies. As a result, the species is left highly exposed to attack by animal predators (Rabibisoa & Ramilison, 1999).

3. Utilization and trade

3.1 Domestic use

Live specimens are sold to harvesters or directly to export operators.

3.2 Legal international trade

After *B. superciliaris* and *B. decaryi, B. perarmata* was the most frequently traded species of *Brookesia* during 2000 et 2001. 302 individuals were exported in 2000 (MEF, 2000; Basic data of the National Forestry Sector Observatory, 2000) and 437 in 2001 (MEF, 2000, 2001). The following table shows the countries to which the highest numbers of specimens were exported in 2000 et 2001.

Table I: Exports of *B. perarmata* from Madagascar in 2000 and 2001

Species / Country	**Germany**	**Belgium**	**Canada**	**Spain**	**Holland**	**Italy**	**Japan**	**Russia**	**USA**	**Total**
B. perarmata	117	16	10	30	25		11	2	528	739

(Source: MEF- CITES Management Authority, Madagascar: Report for the Year 2000 on non-CITES Animals; Basic Data for 2001 on non-CITES Animals)

Of all the *B. perarmata* specimens exported in 2000, 59.27 per cent were sent to the United States of America. In 2001, 79.86 per cent of all exported specimens went to that country, making it the largest importer of *B. perarmata* from Madagascar. The tables below show data on 2000 and 2001 exports of *B. perarmata* to the United States and USA import figures from 1996 to 2001.

Table II: Exports of *Brookesia perarmata* from Madagascar to the USA, 2000 and 2001

Species/ Year	**2000**	**2001**	**Total**
B. perarmata	179	349	528

(Source: MEF- CITES Management Authority, Madagascar: Report for the Year 2000 on non-CITES Animals; Basic Data for 2001 on non-CITES Animals)

Table III Imports of *Brookesia perarmata* to the USA from Madagascar, 1996 to 2001

Species / Year	**1996***	**1997**	**1998**	**1999**	**2000**	**2001***	**Total**
B. perarmata	77	779	1003	345	337	300	2841

* Data for these years incomplete

[Source: US LEMIS database of wildlife imports in Report on international trade in African reptiles, IFAW / International Fund for Animal Welfare (ed.) de Reeve, R., *in prep.*]

With regard to legal international trade in *B. perarmata*, specimens have transited through South Africa. The figures are shown below.

Table IV: Minimum numbers of specimens of *Brookesia perarmata* in transit through South Africa, 1998 to 2000

Year	Number*
1998	115
1999	29
2000	49
Total	**193**

[Source: Attached Malagasy export permits, in transit through South African Customs; document by de Reeve, R., *in prep.*]

The unit price for a *Brookesia perarmata*, noted at one Malagasy operator in 2001, was USD 64.

This species has also appeared on Internet sites in the United States of America since November 2001, in particular those of Global Tropical Reptiles and Aline Reptiles, both based in Florida (Report on international trade in African reptiles, IFAW / International Fund for Animal Welfare (ed.) de Reeve, R., *in prep.*).

3.3 Illegal trade

In November 2000, 250 individuals of *Brookesia perarmata,* 19 of them found to be dead, were seized at the airfield of Antsalova (Bemaraha Programme, 2002).

Tables II and III show that in 2000, when the data from two different sources were comparable, the number of specimens imported into the United States of America exceeded the number of specimens legally exported from Madagascar. A surplus of 158 specimens was not registered with export permits from Madagascar (MEF, 2000; Reeve, R., *in prep.*).

3.4 Actual or potential trade impacts

The numbers in the sub-population of Andranopasazy, which is a harvesting site, were found to decrease from 1998 to 2002. The same finding was also noted at the Bendrao site (Rabibisoa & Ramilison, 2000; Bemaraha Programme, 2002).

3.5 Captive breeding for commercial purposes (outside the country of origin)

No data available.

4. Conservation and management

4.1 Legal status

4.1.1 National

Destruction of the forest is prohibited because the range of the species is part of or near the Protected Area. The same holds for the harvesting of these species (CAMP, 2001; Bemaraha Programme, 2002)

4.1.2 International

In the IUCN context, the species is categorized as Vulnerable (VU). The CAMP evaluators have proposed that it be given the IUCN status of Near Threatened (NT) (CAMP, 2001). The species does not appear in any of the CITES Appendixes, but the Madagascar Management Authority recommends that it be listed in Appendix I.

4.2 Species management

4.2.1 Population monitoring

This study was conducted by the Langaha Association in collaboration with the Bemaraha Project from 1998 to 2002 (Bemaraha Programme, 2002).

4.2.2 Habitat conservation

The existence of *Brookesia perarmata* in the Park, a protected zone where no harvesting of fauna or flora is authorized, allows the conclusion that its habitat is preserved (Bemaraha Programme, 2002).

4.2.3 Management measures

Utilization of *B. perarmata* should no longer be permitted after 1998 according to the policy of the Ministry of Water and Forests (Municipal Decree of 24 April 1998 banning the shipping of wildlife).

4.3 Control measures

4.3.1 International trade

No data available.

4.3.2 Domestic measures

Local authorities and CANFORET officials at Antsalova performed inspections of passengers prior to publication of the Municipal Decree of 24 April 1998 which banned the shipping of wildlife.

5. Information on similar species

No data available.

6. Other comments

Some captive breeding is currently being done, but does not go beyond generation F2. Animals captured in the wild have heavy infestations of roundworms (Yankee & Pollak in Carpenter, 2002).

7. Additional remarks

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