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

Seventeenth meeting of the Conference of the Parties
Johannesburg (South Africa), 24 September – 5 October 2016

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of *Scaphiophryne marmorata,* and *Scaphiophryne boribory* in Appendix II in accordance with Article II, paragraph 2 (a) of the Convention and satisfying Criteria A in Annex 2a of Resolution Conf. 9.24 (Rev. CoP16) and *Scaphiophryne spinosa* in accordance to the Article II paragraph 2 (b).

B. Proponent

Madagascar*.

C. Supporting statement

1. Taxonomy

1.1 Class: Amphibia

1.2 Order: Anura

1.3 Family: Microhylidae

1.4 Genus, species or subspecies, including author and year: *Scaphiophryne boribory* Vences, Raxworthy, Nussbaum & Glaw, 2003, *Scaphiophryne marmorata* Boulenger 1882, *Scaphiophryne spinosa*, Steindachner, 1882

1.5 Scientific synonyms:

1.6 Common names:
English: Marbled Rain Frog, Green Burrowing Frog, green Marbled Burrowing Frog
French: Grenouille verte des terriers
Malagasy: Sahona bokaboka, Sahon'orana

1.7 -

2. Overview

The genus *Scaphiophryne* Boulenger, 1882 *contains* eleven described species of medium-sized microhylidae Gunther, 1859 composing the subfamily Scaphiophryninae Laurent, 1946 endemic to Madagascar. Three - *S. boribory* and *S. marmorata* and *S. spinosa* – respectively Endangered, Vulnerable and Least Concern are green-brown in coloration and commonly called green Marbled Burrowing frogs

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because of their symmetrical green coloration and theirburrowing behavior. If *Scaphiophryne marmorata* and *S. spinosa* were discovered and described respectively by Boulenger and Steindachner, both in 1882, the same date of the genus description, *S. boribory* is recently discovered as a new species and described by Vences, Raxworthy, Nussbaum and Glaw in 2003. Before that date, as the appearances of the three species are very similar, other than the tubercle's structures, and their localisation overlapped, they were both surely exported as *S. marmorata, a* problem that may expose the less distributed species in danger. That is the reason of our request to include the 3 species in appendix II beside the increasing demands due to the development of the number of Countries interested in the Malagasy Frogs.

3. Species characteristics

3.1 Distribution

Both species are endemic to Madagascar and localised in the central eastern and eastern of the Island,.

S.. boribory has been found by researchers at Fierenana, and Marotondrano Special Reserve (figure 3) and *S. marmorata* (figure 2) in Ampahanana forest (near Fierenana), Andasibe, Zahamena (Volotsangana river). The 2 species are with discontinuing distribution (Glaw and Vences, 2007).but the collectors told that these species has continual distribution between these points (Rabemananjara, Pers Obs).

For *Scaphiophryne spinosa*, we have a larger distribution of the species as shown in the figure 1. This species is present at the following sites: Ambana, Ambatolahy, Ambatovaky , Ampasy, An'Ala, Andringitra (Sahavatoy river), Ankeniheny, Ankopakopaka forest, Foizana, Moramanga, Ranomena (Ranomafana),Sahavatoy and Vatoharanana (Glaw and Vences, 2007). The presence out of these sites will need collaboration with the operators.

3.2 Habitat

S. boribory and *S. marmorata* and *S. spinosa* live in the same habitat structure. In rainy season, we can find them in temporary swamps and during the winter, these species bury themselves in the ground. They are always near primary or secondary humid Forests (Glaw and Vences, 2007).

3.3 Biological characteristics

Scaphiophryne boribory has only the calls recorded in captivity. Apparently a long lasting fast series of very short melodious notes, similar to other species of *Scaphiophryne*. The reproduction behavior is probably the same as *Scaphiophryne marmorata*. (Glaw and Vences, 2007).

Scaphiophryne marmorata tadpoles have recently been found in large temporary pools in rainforest at the edge of Analamazoatra Reserve. At Andasibe, especially close to Analamazoatra Reserve entrance, single specimens, especially juveniles, can often be observed moving on the ground at night. Since reproduction has never been observed despite intensive fieldwork by many researchers around Andasibe, it is likely that this species, as other *Scaphiophryne*, is a very explosive breeder that reproduces only once per rainy season after the first heavy rains (Glaw and Vences, 2007).

Scaphiophryne spinosa is known from rainforest areas, where single specimens can occasionally been found moving on the forest floor. Reproduces in temporary pools or flooded marshes, probably in a very explosive way and only once or a few times every rainy season. Choruses can be heard at night and sometimes also during the day. A large number of small eggs are laid, as assessed by dissection of preserved females. The calls are constituted by long lasting fast series of very short melodious notes, similar to other species of *Scaphiophryne*.

The collaboration with the collectors permitted to find out that the both species have the same burrowing behaviors making them very difficult to find without well trained people for catching them (Rabemananjara, Pers Obs).

3.4 Morphological characteristics

Scaphiophryne boribory description: M 49-60 mm, F 53-59 mm. A large and poorly known *Scaphiophryne* known from only a few sites in eastern Madagascar. Tympanum not visible. Tibiotarsal articulation at most reaches between forelimb insertion and tympanum. Tips of fingers and toes strongly enlarged. Skin rather smooth with a number of larger granules. Dorsally green with symmetrical brown markings. In the population from Marotondrano, based on observations of A. Raselimanana, the predominant colour can be brown fading into olive green in some areas, and with darker brown markings. The terminal disks on fingers and toes are often reddish. Ventrally with a highly contrasted black-white pattern, usually black with white rounded spots of different size. Throat dark brown to black (Glaw and Vences, 2007).

Scaphiophryne marmorata description: M 32-36 mm, F 35-44 mm. Tympanum indistinct but typically visible. Tibiotarsal articulation reaches at the most between insertion of forelimb and tympanum. Tips of fingers and toes strongly enlarged. Skin relatively smooth with a number of large granules. Typically there are two symmetrical pairs of larger tubercles. a pair of elongated tubercles in the shoulder region and one of smaller tubercles on the posterior back. Dorsally green with symmetrical darker markings. Ventral pattern often with contrasted dark-white marbling, the dark colour extending onto the posterior belly (Glaw and Vences, 2007).

Scaphiophryne spinosa description: M 40-48 mm, F 43-48 mm. Tympanum indistinct. Tibiotarsal articulation reaches insertion of forelimb or tympanum. Tips of fingers and toes strongly enlarged. Skin very granular with several dermal spines especially above forelimb insertion. Dorsally green with symmetrical darker markings. Ventrally usually lacking contrasted marbling, especially on the belly, usually dark on throat and chest (Glaw and Vences, 2007).

3.5 Role of the species in its ecosystem

We have not yet any clear information about their behaviour and feeding of these species in their ecosystem.

4. Status and trends

4.1 Habitat trends

The habitat around Fierenana is very disturbed because without any special protection policy.

For the Special Reserves, there are more control but we need to be very careful for the last five years of managing difficulties of the Promoters.

4.2 Population size

Population sizes in the wild of both species are unknown.

4.3 Population structure

We have not available information about the population structure in the wild. The information from Captive-Breeder estimates that their wild life expectancy is ranged from 2-3 years however he same Captive-Breeder have seen individuals that are 4-7 years in age, so like anything in captivity, the life expectancy will surely be higher.

4.4 Population trends

No information is available on population trends. Likely to be stable at sites where habitat still exists, but declining at sites where habitat is receding. *Scaphiophryne boribory* and *S. marmorata* around Fierenana are the more targeted by Collectors and probably the most heavily impacted by the harvest. *Scaphiophryne spinosa* can be confounded into *Scaphiophryne marmorata* and some

population at overlapped sites can be impacted by over-harvesting without any management measures.

4.5 Geographic trends

No exact information for the geographic trends is available but any continual forest loss may restrict the natural habitat and more studies should be done for the habitat adaptability of these species. We have to consider the experience of the Collectors for the geographical trends.

5. Threats

The main threat to both species is habitat loss. The species without any management plan can be threatened.

The recent detection of the pathogenic amphibian chytrid fungus *Bd* and ranavirus in Madagascar are also of concern since *Dyscophus* species have been shown to be susceptible to this pathogen in captivity (Oevermann et al., 2005), however to date amphibian population declines and mortality have not been observed due to disease in situ (Bletz et al., 2015)

Regarding the threat presented by collection for the international pet trade, it is not clear whether current unregulated levels of harvesting wild frogs are sustainable or not. *Scaphiophryne boribory and S. marmorata* are harvested in the same locality around Fierenana and we need further studies to prove the impact of trade for the species. For *S. spinosa*, any description confusion may impact the population in sites overlapped with the two other species.

6. Utilization and trade

6.1 National utilization

Both species sometimes are collected and used for display at zoological parks in Madagascar.

6.2 Legal trade

The trade of all three species are legal. They are traded live for use in the international pet trade.

The table 1 below shows the export trade volume from 2012 to 2015 according to the database of the Secretariat General de la Faune et de la Flore at the Direction des Ressources Forestieres of Antananarivo, Madagascar.

Table 1

Year/ Country	**England**	**Spain**	**France**	**Hong Kong**	**Hungary**	**Italy**	**Japan**	**USA**	**TOTAL**
Scaphiophryne boribory									
2012									
2013									
2014									
2015							40		**40**
Saphiophryne marmorata									
2012								40	**40**
2013								51	**51**
2014									
2015			10	70		20	50	95	**245**
Scaphiophryne spinosa									
2012									
2013									
2014									
2015	100	20			20	30		10	**180**

The US import information available from 2012 to 2014 is presented by the table 2 below:

Table 2

Species/Year	2012	2013	2014
Scaphiophryne marmorata	**403**	**205**	**89**
Scaphiophryne species	**303**	**0**	**0**

According to these two tables, there are big differences between the import number and the export number if we just consider the USA statistic's case for *Scaphiophryne marmorata*. This is because of the presence of retailers out of Madagascar or the captive bred trade of the species, or the data at the national level which is not yet centralized in the SGFF because the non-CITES species can be exported through export permit from decentralized services.

We consider in this analysis the *Scaphiophryne* temporary called "species" as including *Scaphiophryne boribory* other than any non-well identified individuals declared by each trader.

In the Madagascar's database, *Scaphophryne spinosa* were not mentioned before 2015. A situation that can be traduced as non-well described species before this year as well.

6.3 Parts and derivatives in trade

Whole live frogs for the international pet trade.

Persevered specimens and tissues samples for research.

6.4 Illegal trade

No illegal trade has been declared for all three species.

6.5 Actual or potential trade impacts

It is not clear whether trade in the species is sustainable or not. *Scaphiophryne marmorata* starts to be in the trade with rising demand. Actually that the use of the new identification is just adopted for the last few years for *Scaphiophryne boribory*, the impact of the trade can be controlled according to the more investigations. *Scaphiophryne spinosa* is just appearing into the trade database in 2015, which does not mean that the species were not confounded with the *Scaphiophryne marmorata* and *S. boribory*.

7. Legal instruments

7.1 National

According to the decree 2006-400 about categorisation of the species, they are classified as category I and Class II which means all three species are protected but the capture and collect need authorisation from "Organe de GestionCITES Madagascar" after scientific advice from "Autorité scientifique Madagascar."

7.2 International

No IUCN and EDGE protection and no CITES management.

8. Species management

8.1 Management measures

There are no species-based management measures currently in place.

8.2 Population monitoring

There are no population monitoring programs being carried out for either species.

8.3 Control measures

8.3.1 International

There are no control measures on the international level for either species.

8.3.2 Domestic

Permits are required from the Ministère de l'Environnement, de l'Ecologie,de la Mer et des Forêts to collect wildlife for commercial purposes.

8.4 Captive breeding and artificial propagation

All three species are known to be bred in captivity on numerous occasions at zoological institutions and are occasionally bred for commercial purposes by private breeders.

8.5 Habitat conservation

Scaphiophryne boribory and*S marmorata* can be found in protected areas such as the Marotandrano Special Reserve, Ranomafana National Park, Ambatovaky Special Reserve and probably at the Ankeniheny-Zahamena Forest Corridor which is a new protected area. However, these areas are still under high pressures because of the funding difficulties of the Promoters during the last 7years.

8.6 Safeguards

There are no safeguards plan to assure the survival of either species other than their presence into Protected Areas.

9. Information on similar species

Scaphiophryne menabensis of the western part of Madagascar but with more fade coloration. This species is not registered as traded in the local database.

10. Consultations

ASG Madagascar, Scientific Authorities CITES Madagascar

11. Additional remarks

12. References

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