

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Inclusion of *Langaha* spp. in Appendix II.

This proposal has to do with the three species of the genus *Langaha* currently identified, namely *Langaha madagascariensis* (Bonaterre, 1790), *Langaha alluaudi* (Mocquard, 1901) and *Langaha pseudoalluaudi* (Domergue, 1988), as well as the new species of *Langaha* which will be described subsequently. With its fairly distinctive shape, notably the presence of a long rostral projection and ornamental features above the eyes, these tree-dwelling snakes are highly attractive to enthusiasts and animal collectors.

Langaha are among the reptiles which are traded internationally to differing extents, depending on the species concerned. The export data for 2001, 2002 and 2003 supplied by the Ministry of Water and Forests (MEF) make this point very clearly. (See the analytical details in the section covering each individual species). Generally speaking, all of the specimens exported in a year have been taken from the wild. Techniques of captive breeding have not reached a point where output will meet the needs. Consequently, the impact of this harvesting from the wild for commercial purposes, although inadequately studied and frequently underestimated, is doubtless considerable and might lead to species' rapidly becoming locally extinct unless appropriate measures are taken in time.

The inclusion this genus in Appendix II in accordance with Article II, paragraph 2 (b) (Resolution Conf. 9.24, Annex 2 b, paragraph B) is proposed primarily as a precautionary measure, related to the rarity of sightings in the wild.

B. Proponent

Madagascar.

C. Supporting statement

Langaha, with their rostral features, are among the most spectacular snakes in Madagascar, where they are endemic to the main island. The species is arboreal, with a filiform shape and a long neck. They make particular use of bushy growth and lianas, or twigs and branches, in the form of lianas, to mimic the shape and colour of their substrate perfectly. The *Langaha* species manifest a remarkable degree of sexual dimorphism with regard to the structure of the rostral projection and the colouring. The projection is longer and more pointed in the male, more spread in the female. The male is often more brightly coloured than the female. The eyes are small and have vertical to ellipsoidal pupils, depending on the light. The diet is essentially based on lizards and small vertebrates.

Very little information is available on *Langaha*. However, during the last decade, progress in biological exploration throughout Madagascar has made it possible to perform numerous harvestings and to delimit approximately the ranges of each species. A publication is currently being prepared (Raselimanana, in press) which reviews the diagnosis of each species and analyses the distribution of each species with new data from recent harvests.

The three species have no legal conservation status. They do not appear in the IUCN list, nor are they included in a CITES Appendix. They are in international trade, even though two of them are very rare or have a very limited range.

Langaha madagascariensis Bonaterre, 1790

1. Taxonomy

- 1.1 Class: Reptilia
- 1.2 Order: Squamata
- 1.3 Family: Colubridae
- 1.4 Species: *Langaha madagascariensis* Bonaterre, 1790
- 1.5 Scientific synonym: *Langaha nasuta*
- 1.6 Common names: English: Leaf-nosed snake, Twig mimic snake
French:
Spanish:
Malagasy: Sarivaha, Famaliakoho

2. Biological parameters

This species is characterized by a highly accentuated sexual dimorphism in its colouring. The male is light chestnut-brown in colour on the back, this being delimited laterally by a light-coloured line edged at the bottom by another line, darker or blackish. The abdomen is yellowish, in particular around the throat. The males of certain populations have a bright red line along the edge of the lateroventral black line. The female on the other hand is chestnut-brown/greyish with dark to blackish blotches or marks. This is an oviparous species, with a pregnant female having been found to be carrying four eggs. The reproductive period is not known, but pregnant females have been observed from November to February. The duration of incubation is unknown, but baby snakes have been encountered around the middle of March or beginning of April. The species feeds on lizards. Small *Brookesia brygooi* and *Calumma nasuta* chameleons have been identified in the stomach of one specimen. A male captured in southern Madagascar had a *Chalarodon madagascariensis* ground-dwelling iguana in its stomach. Frogs and small birds are also part of its diet. In captivity, it accepts anoles, geckos and mice (Glaw & Vences, 1994 ; Guibé, 1958 ; Love, in press).

2.1 Country of origin

Madagascar.

2.2 Distribution

Langaha madagascariensis has a very wide although fragmented range. It is distributed over almost all of the regions of Madagascar except for the north-east, the south-east and the centre.

2.3 Habitat

This is an arboreal species. It frequents both the eastern littoral rainforest and the transition forest of the north-west and the north-east, the deciduous forest in the west and the dry forest and thorny bush of the south-west and the south.

2.4 Population status

No information is available on population status. The species is not very frequent in the areas where it is found. In seven days of intensive searching no more than six specimens were found in the areas where this species is encountered. This suggests a low population density in the wild. Other than certain geographical variations, there is no confirmation of the existence of sub-populations.

2.5 Population trends

No data available.

2.6 Extent of distribution

In addition to the localities cited in Glaw and Vences, 1994, this species has recently been harvested in Ankarana (Raselimanana, personal communication), in Tampolo (Raselimanana *et al.*, 1998), in the Seven Lakes region and in south and south-west Madagascar. In other words the range is much more extensive. However, it remains fairly fragmented and the needs of the species are not very well known.

2.7 Role of the species in its ecosystem

It is a predatory species, and plays a regulating role with regard to the populations of prey species. Its position within the food chain suggests that it plays an important role in the transfer of energy.

2.8 Threats

The species is able to frequent fairly degraded growth areas, and thus has a certain tolerance for degradation of its natural habitat. However, harvesting for commercial purposes constitutes a threat to this species unless serious measures are taken. Given the low abundance of the species in the wild, exhaustive or repetitive harvesting in the same places entails a risk of its becoming locally extinct in the near future. Additionally the same species is exported under two different names (its real name and one used as a synonym), which brings about an increase in the numbers exported. For example, in 2001, 125 specimens were exported, 65 of them under the name *Langaha madagascariensis* and the remainder under the name *L. nasuta* (the synonym). The same pattern can be seen in the exports in 2001, with 54 exported (31/23) and in 2003, with 213 (131/82).

3. Utilization and trade

3.1 National utilization

No domestic use. Live specimens are sold to collectors or directly to exporters.

3.2 Legal international trade

Reference to the number of specimens exported indicates that this species is not particularly vigorously traded. However, taking into account the experience in the wild with regard to this species, it may be concluded that even the legal trade should be closely re-examined.

3.3 Illegal international trade

No data available.

3.4 Actual or potential trade impacts

No data available. However, exhaustive or repetitive harvesting of specimens in the same place constitutes a potential threat entailing a risk of the species becoming locally extinct in the near future.

3.5 Captive breeding for commercial purposes:

No data available.

Table: Exports of *Langaha madagascariensis* from Madagascar in 2001, 2002 and 2003.

Year	Species	Germany	Canada	Japan	Switzerland	Netherlands	France	Italy	USA	UK	Taiwan (Province of China)	Thailand	Spain
2001	<i>L. madagascariensis</i>	41		12					12				
	<i>L. nasuta</i>					4			36	6		4	10
Total		41		12		4			48	6		4	10
2002	<i>L. madagascariensis</i>			18	5				6				6
	<i>L. nasuta</i>						5		12	6			
Total				18	5		5		18	6			6
2003	<i>L. madagascariensis</i>	16	10	20	6				25				
	<i>L. nasuta</i>						10	5	40		20	12	
Total		16	10	20	6		10	5	65		20	12	

(Source: MEF - CITES Management Authority, Madagascar)

An overall analysis of these export data has shown that over the past three years, the United States of America has been the principal destination for the specimens exported, accounting on its own for 38.4% of exports in 2001, 33.33% in 2002 and 30.37% in 2003. Additionally, the appearance of new countries and territories may be noted, such as Canada, Switzerland, France, Italy and Taiwan (Province of China). This indicates an increase in market demand. The drop in the rate of exporting in 2002 is purely and simply the result of the crisis in Madagascar.

4. Conservation and management

4.1 Legal status

4.1.1 National

No legal protected status. It is, however, represented in at least three protected areas where harvesting of specimens for commercial purposes is prohibited.

4.1.2 International

No legal status for conservation or management.

4.2 Species management

4.2.1 Population monitoring

No monitoring.

4.2.2 Habitat conservation

Langaha madagascariensis is known in three protected areas (Lokobe SR, Ankarana SR and Ankarafantsika NP).

4.2.3 Management measures

No management measures.

4.3 Control measures

4.3.1 International trade

No data available. Since this is not a CITES species nor one listed by IUCN, there is probably no control.

4.3.2 Domestic measures

None.

5. Information on similar species

Langaha madagascariensis can be distinguished easily from the other species by the shape of its rostral feature, by the absence of ornamental features above the eyes and by its colouring. This species resembles no others, except in the colouring of the females.

6. Other comments

Certain zoos in other countries have specimens of this species in captivity, but information gathered from the Internet suggests that generally they have only a single specimen.

7. Additional remarks (if necessary)

8. References

Glaw, F. & M. Vences, 1994. A Field Guide to the Amphibians and Reptiles of Madagascar. Second edition including mammals and freshwater fish. Moos Druck, Leverkusen and FARBO, Cologne.

- Guibé, J. 1958. Les serpents de Madagascar. *Mémoires de l'Institut scientifique de Madagascar* 12:189-260.
- MEF, 2001. Basic data of the CITES Management Authority, Madagascar for 2001 on non-CITES animals. Antananarivo, Madagascar
- MEF, 2002. Basic data of the CITES Management Authority, Madagascar for 2002 on non-CITES animals. Antananarivo, Madagascar.
- MEF, 2003. Basic data of the CITES Management Authority, Madagascar for 2003 on non-CITES animals. Antananarivo, Madagascar.
- Raselimanana A. P. In press. The genus *Langaha* on Madagascar: rediscovery of *L. pseudoallaudi*, Domergue 1988. *Novitates*.
- Raselimanana, A.P., D. Rakotomalala, & F. Rakotondramparany. 1998. Les reptiles et amphibiens: diversité et conservation, In *Inventaire biologique de la forêt littorale de Tampolo (Fenoarivo Antsinanana)*. J. Ratsirarison and S.M. Goodman (eds.). Centre d'Information et de Documentation Scientifique et Technique, Antananarivo, Recherches pour le Développement, Série Sciences biologiques, No. 14: 183-195.

Langaha alluaudi Mocquard, 1901

1. Taxonomy

- 1.1 Class: Reptilia
- 1.2 Order: Squamata
- 1.3 Family: Colubridae
- 1.4 Species: *Langaha alluaudi* Mocquard, 1901
- 1.5 Scientific synonym: None
- 1.6 Common names: English:
French:
Spanish:
Malagasy: Fandrefiala

2. Biological parameters

This species is characterized by a very marked sexual dimorphism in its rostral projection. In the female, it is larger, more leaf-shaped and folded into a tube shape, concave on the underside, while in the male, it is tapering and triangular (Guibé, 1958). A kind of horn will be observed above the eye. Colouring is chestnut-brownish in both sexes, with brownish transverse marks.

This is an oviparous species. The reproductive period is not known, but in the month of March, a juvenile born that same year was captured, already at a more advanced stage (trace of the location of the umbilical cord barely visible on the posterior part of the abdomen). The duration of incubation is unknown. Not much is known about the species' diet. In a specimen captured in the forest of Mikea the content of the stomach was identified as containing residues of diurnal geckos (*Phelsuma*). It probably feeds on all of the small diurnal geckos within its reach.

2.1 Country of origin

Madagascar.

2.2 Distribution

Langaha alluaudi has a localized range in the south-west of Madagascar. Guibé (1958) has indicated the south-east, the south and the west as areas of distribution. The localities noted in the south-east and the south are not confirmed by new captures. It is highly probable that the specimens collected in these regions are in fact *L. madagascariensis* which is fairly frequent in this sub-arid area of the south and the south-eastern shore. It is possible to confuse a young male *L. madagascariensis* with a male *L. alluaudi* if one only considers the colouring. In numerous intensive biological investigations carried out in the south and south-east of Madagascar over the past 15 years, no specimen of *L. alluaudi* has ever been encountered. This species appears to be localized in the transition forest in the south-west of Madagascar, in particular the forest of Mikea.

2.3 Habitat

It is an arboreal species. It frequents transition forest and the thickets of the south-west of Madagascar. Apparently, it prefers bushy and intergrown areas. All specimens recently collected in the forest of Mikea have been observed in the same types of habitat: thicket on white sand.

2.4 Population status

No information is available on population status. The species is not very frequent in the areas where it is found. Over the course of two months of biological inventoring in the forest of Mikea, only three specimens were found. This situation suggests a low population density in the wild. Existence of sub-populations is not confirmed, nor has any variation in population levels been observed.

2.5 Population trends

No data available.

2.6 Extent of distribution

Glaw and Vences, 1994, do no more than repeat the localities already listed by Guibé (1958). The Salary Nord and Ankotapiky locations in the forest of Mikea (Raselimanana, in press) are new. One specimen was recently collected in the PK 32 forest to the north of Tuléar. This is the only known location where the cohabitation of *Langaha alluaudi* and *L. madagascariensis* has been confirmed (Raselimanana, personal communication).

2.7 Role of the species in its ecosystem

It is a predatory species, and plays a regulating role with regard to the populations of prey species. Its position within the food chain suggests that it plays an important role in the transfer of energy.

2.8 Threats

The species appears to be confined to a fairly specific type of habitat: thickets on white sand with a dominant presence of euphorbia and didieraceae. The range, unless new harvests show something different, covers only the south-western region of Madagascar. Since the areas where it is found are unsuitable for agriculture, and ground-clearing is limited to selective cutting of wood for fires or construction, the risk of habitat loss is fairly limited, except in certain locations which are in the interior, such as PK 32. However, harvesting for commercial purposes constitutes a threat to this species unless serious measures are taken. Given the low density of the species in the wild, exhaustive or repetitive harvesting in the same places will be fatal to the population. There were 27 specimens exported in 2002, which we suspect all probably came from the forest of Mikea. The presence of local harvesters is confirmed in this region. They also harvest other wild animals from the same area.

3. Utilization and trade

3.1 National utilization

No domestic use. It appears that live specimens are sold to collectors.

3.2 Legal international trade

Reference to the number of specimens exported would tend to suggest that this species is not really the object of commercial trade. However, based on the reality on the ground and the way in which the resource is utilized locally, there is a probable risk of a population decline in the near future unless effective management regulation measures are taken. It is necessary at the very least to indicate clearly in the permit the site where the specimen was captured in order to be able to estimate the population status as it is impacted by harvesting trends.

Table: Exports of *Langaha alluaudi* from Madagascar in 2001, 2002 and 2003.

Year	France	USA	UK	Spain
2001	0	0	0	0
2002	5	10	6	6
2003	0	0	0	0

(Source: MEF - CITES Management Authority, Madagascar)

An overall analysis of these export data has shown that over the past three years, the United States has been the principal destination for the specimens exported, accounting on its own for 37.04% of exports in 2002. No exports were recorded for 2001 or 2003. This would seem to suggest that the harvesting site is a very recent discovery and the harvester(s) who identified it secured a large portion at the first attempt, probably using young boys from the village as gatherers. (The villagers along the shore between Tsifota and Salary Nord have reported that purchasers of animals had been there).

3.3 Illegal international trade

No data available.

3.4 Actual or potential trade impacts

No data available. However, harvesting of specimens in the same place constitutes a potential threat entailing a risk of the species becoming locally extinct.

3.5 Captive breeding for commercial purposes

No data available.

4. Conservation and management

4.1 Legal status

4.1.1 National

No legal protected status. Its presence in any protected area is not confirmed. There is currently a proposal to make the forest of Mikea a protected area.

4.1.2 International

No legal status for conservation or management.

4.2 Species management

4.2.1 Population monitoring

No monitoring.

4.2.2 Habitat conservation

Langaha alluaudi is not particularly threatened by habitat destruction. The area where it is found is unsuited to crop-growing. Grazing by free-roaming cows and goats is not a threat, at least for several decades into the future.

4.2.3 Management measures

No management measures.

4.3 Control measures

4.3.1 International trade

No data available. Since this is not a CITES species nor one listed by IUCN, there is probably no control.

4.3.2 Domestic measures

None.

5. Information on similar species

Langaha alluaudi has a very characteristic appearance, with its virtually uniform colouring and the horns above the eyes which are more marked in the female, but fairly rudimentary in the male. It may be confused with *L. pseudoalluaudi*, but several features, particularly in the scales, distinguish them (Domergue, 1988). Additionally, their ranges do not overlap, the latter species being known only in the more northerly part of Madagascar.

6. Other comments

7. Additional remarks (if necessary)

8. References

Domergue Ch. A. 1988. Notes sur les serpents de la région malgache. VIII. Colubridae nouveaux. *Bulletin du Muséum d'Histoire Naturelle, Paris*, 4th series, 10: 135-146.

Glaw, F. & M. Vences, 1994. A Field Guide to the Amphibians and Reptiles of Madagascar. Second edition including mammals and freshwater fish. Moos Druck, Leverkusen and FARBO, Cologne.

Guibé, J. 1958. Les serpents de Madagascar. *Mémoires de l'Institut scientifique de Madagascar* 12:189-260.

MEF, 2001. Basic data of the CITES Management Authority, Madagascar for 2001 on non-CITES animals. Antananarivo, Madagascar

MEF, 2002. Basic data of the CITES Management Authority, Madagascar for 2002 on non-CITES animals. Antananarivo, Madagascar.

MEF, 2003. Basic data of the CITES Management Authority, Madagascar for 2003 on non-CITES animals. Antananarivo, Madagascar.

Raselimanana A. P. (in press). The genus *Langaha* on Madagascar: rediscovery of *L. pseudoalluaudi*, Domergue 1988. *Novitates*.

Raselimanana, A.P. (in press). L'Herpétofaune de la forêt de Mikea. *In*: Raselimanana A.P. & S.M. Goodman (eds.). Inventaire floristique et faunistique de la forêt de Mikea: Paysage écologique et diversité biologique d'une préoccupation majeure pour la conservation. *Recherches pour le Développement, Série Sciences biologiques*.

Langaha pseudoalluaudi Domergue, 1988

1. Taxonomy

- 1.1 Class: Reptilia
- 1.2 Order: Squamata
- 1.3 Family: Colubridae
- 1.4 Species: *Langaha pseudoalluaudi* Domergue, 1988
- 1.5 Scientific synonym:
- 1.6 Common names: English:
French:
Spanish:

2. Biological parameters

This species is characterized by the presence of projections above the eyes in the shape of horns. The nasal extension is leaf-shaped, formed of elongated scales, which can be raised to the vertical (Domergue, 1988). Initially only one specimen was known, a female, but a second specimen, a male, was harvested in 1997 (Raselimanana, in press). There is no marked sexual dimorphism. The general colouring is a greyish brown with dark marks which are more prominent in various places.

This is an oviparous species. The female caught on 10 October 1966 in the region of Ambilobe (its *terra typica*) laid three eggs shortly after being captured (Domergue, 1988). The reproductive period is in fact fairly early, because generally speaking biological activity restarts in most species of herpetological fauna at the end of September or beginning of October or even a little later. The duration of incubation is unknown. Nothing is known of its diet.

2.1 Country of origin

Madagascar.

2.2 Distribution

Langaha pseudoalluaudi has a very restricted range in the northern part of Madagascar, in the region between Ambilobe and Daraina. This species has been identified only on the basis of two specimens. One, the holotype, is in the Museum of Natural History in Paris, and the second is in the collection room of the Department of Animal Biology, University of Antananarivo, Madagascar.

2.3 Habitat

It is an arboreal species, frequenting the transition forest between the rainforest in the east and the deciduous growth area in the west. Overall, the vegetation is more like the semi-deciduous rainforest of the central plateau.

2.4 Population status

No information is available on population status. Apparently this is a very rare species. Several biological searches have been undertaken in the areas where it lives over the past six years, but no new captures have been reported.

2.5 Population trends

No information.

2.6 Extent of distribution

Various biological inventorying undertakings in all the northern and north-eastern regions of Madagascar have failed to identify the extent of the distribution.

2.7 Role of the species in its ecosystem

No information available, but it is probably a predatory species, like the other species of the genus. It plays an important role in the transfer of energy.

2.8 Threats

The species occurs in an area where deforestation is a major problem, and is very infrequent in the network of protected areas. In fact, this species has not yet been recorded in any protected area. It has not yet been recorded as being in trade, but the list of exports for 2002 records 16 specimens under the name *Langaha*, without further detail, whereas the other two species are well defined. That suggests to us that these may be *L. pseudoalluaudi* which the exporters have been unable to identify. Given the current situation of this species, any form of trading will be fatal to the survival of the population.

3. Utilization and trade

3.1 National utilization

No information available.

3.2 Legal international trade

No data available.

3.3 Illegal international trade

No data available.

3.4 Actual or potential trade impacts

No data available. However, any form of trade based on harvesting from the wild threatens the population which already has an extremely low density.

3.5 Captive breeding for commercial purposes

No data available.

4. Conservation and management

4.1 Legal status

4.1.1 National

No legal protected status. Its presence in any protected area has not been confirmed.

4.1.2 International

No legal status for conservation or management.

4.2 Species management

4.2.1 Population monitoring

No monitoring.

4.2.2 Habitat conservation

Deforestation resulting from agriculture and from mining is very prevalent in the area where this species occurs.

4.2.3 Management measures

No management measures.

4.3 Control measures

4.3.1 International trade

No data available. Since this is not a CITES species nor one listed by IUCN, there is probably no control.

4.3.2 Domestic measures

None.

5. Information on similar species

Langaha alluaudi is somewhat similar, but *L. pseudoalluaudi* can be distinguished from it by the structure of the scales and the shape of the rostral feature. Additionally, their ranges do not overlap.

6. Other comments

7. Additional remarks (if necessary)

8. References

Domergue Ch. A. 1988. Notes sur les serpents de la région malgache. VIII. Colubridae nouveaux. *Bulletin du Muséum d'Histoire Naturelle, Paris*, 4th series, 10: 135-146.

MEF, 2002. Basic data of the CITES Management Authority, Madagascar for 2001 on non-CITES animals. Antananarivo, Madagascar.

Raselimanana A. P. (in press). The genus *Langaha* on Madagascar: rediscovery of *L. pseudoalluaudi*, Domergue 1988. *Novitates*.