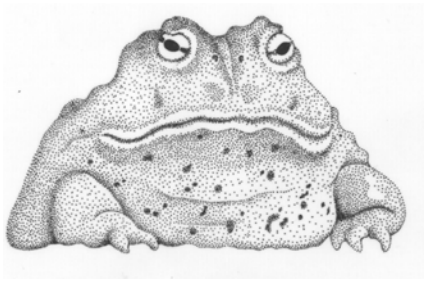
 ISSN 1026-0269



FROGLOG

Newsletter of the IUCN /SSC Amphibian Specialist Group (ASG)

February 2007, Number 79

Amphibian Declines in Africa

By Tim Halliday

The 8th meeting of the Herpetological Association of Africa (HAA) was held in Potchefstroom, South Africa from 24 to 27 November, 2006. The meeting, sponsored by the DAPTF, was organised by Louis du Preez. It provided a very interesting overview of work on amphibians currently going on in southern Africa, including a number of projects funded by the DAPTF.

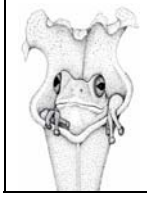
In a workshop on amphibian declines, Les Minter reviewed the status of southern African amphibians; 20 endemic species are endangered, and habitat degradation threatens more species than any other factor. Ché Weldon summarised recent information about chytridiomycosis in Africa. The disease is widespread in southern and east Africa but does not appear to have caused mass mortality events. Kevin Smith discussed different methods for monitoring amphibians and suggested that determining occupancy over a large area provides more useful data than intensive monitoring of individual sites. James Harrison presented plans for the next stage in the development of the Southern Africa Frog Atlas.

During the main symposium, several talks dealt with amphibian decline issues. Ché Weldon reported a survey of frogs in Madagascar that suggests that chytridiomycosis is absent from the island, but warned that Madagascan frogs are probably highly susceptible to the disease, should it be introduced. Chytridiomycosis is endemic in southern Africa, but seems rarely to cause mass mortality. Kevin Smith reported studies of stream frogs in the Drakensburg where mortality does occur, at higher altitudes, in *Strongylopus hymenopus*, but the impact of this on populations is not yet clear. He also reported that chytrid-infected tadpoles of *Heleophryne natalensis* develop distinctive markings around their mouthparts; no mass mortality in this species has been observed.

The African bullfrog *Pyxicephalus adspersus* is threatened by accelerating habitat loss in many parts of its range; while many breeding sites are protected, less attention has been paid to its terrestrial habitat. Using radio-telemetry, Caroline Yetman, has found that females disperse further from breeding sites than males, suggesting that loss of terrestrial habitat may threaten females more than males. James Harvey, working on the critically endangered moss frog *Arthroleptella ngongoniensis*, has located several new populations, revealing that its habitat requirements are not as constrained as was previously thought.

The endangered leopard toad *Bufo pantherinus* has a very restricted range that is seriously threatened by human development. It disperses more than 500 m from breeding sites and very large numbers are killed on roads. The long-term survival of this species depends on improving both town planning and public awareness. Atherton de Villiers reported on the continuing long-term monitoring of the Table Mountain ghost frog *Heleophryne rosei*. This very restricted population is reasonably stable, but is under continuous threat from a variety of factors, including water extraction and climate change. Because its tadpoles take more than a year to reach metamorphosis, it is very dependent on perennial streams. John Measey described his work on the landscape genetics of the Kenyan frog *Schoutedenella xenodactyloides* which, surprisingly, suggests that this tiny frog can disperse long distances across unsuitable dry savannah.

Ernst Baard reported on recent changes in legislation and policy in South Africa with regard to protected, threatened, alien and invasive species, and was optimistic that these will open the way to more effective conservation of amphibians. Following the meeting, I visited the impressive new amphibian breeding facility at Johannesburg Zoo, which is starting its work by developing techniques to keep and breed frogs, using five common South African species.



An update on the amphibian richness of Gabon and its representation in national parks

By: Olivier S.G. Pauwels and Mark-Oliver Rödel

The Equatorial area between Cameroon and Congo has long been neglected by amphibian researchers. Nevertheless, the amphibian fauna of Gabon greatly benefitted from a series of intensive field studies within the last decade, which provided information on amphibian richness and the description of several new taxa. These recently described species are: the astylosternids *Leptodactylodon blanci* (the first

record of this genus from Gabon) and *L. stevarti*, the bufonid *Werneria iboundji* (the only representative of this genus from Gabon) and the hyperoliid *Leptopelis crystallinoron* (see Ohler, 1999; Burger *et al*., 2005; Lötters *et al*., 2005; Rödel & Pauwels, 2003; Rödel *et al*., 2004).

A number of other additions to Gabon's amphibian fauna were also made during the same period, increasing the national species list from 72 (the number given in the first comprehensive list published for the country by Frétey & Blanc, 2000) to 88 species. However, a dozen new species records still require taxonomic investigations (see details in Pauwels & Rödel, 2006) as some of them might represent new taxa. The recent surveys were conducted at Crystal, Loango, Lopé and Moukalaba-Doudou National Parks and surrounding areas; Ivindo National Park was surveyed in the seventies. Eight national parks in Gabon remain data deficient. Detailed lists for the surveyed parks were provided by Burger *et al*. (2006) and Pauwels & Rödel (2006).

Of the 88 species currently recorded from Gabon, 76 (86.4%) are known from at least one Gabonese national park, including all near endemics (*sensu* Anderson, 2002), but only three (50%) of the endemics. *Werneria iboundji* (known from a single waterfall on Mount Iboundji in the heart of the Massif du Chaillu, south of Lopé National Park), *Phrynobatrachus ogoensis* and *Hymenochirus feae* are still yet to be found in a national park. Amphibian records are also available for only one additional national park, namely Pongara, with a single species record (*Arthroleptis variabilis*). Thus, for seven of the 13 national parks of Gabon, not a single species record is currently available.

A huge number of mountain peaks, caves, waterfalls, and possible Pleistocene refuges are yet to be explored inside the national parks of Gabon. No species is currently known from more than four parks, except *Silurana epitropicalis* recorded from five. Among the surveyed national parks, Moukalaba-Doudou contains 57 described species and 13 species of unresolved taxonomic status.

Priority actions for amphiban conservation in Gabon should include (1) verfiying the presence of all species not yet recorded (especially the three endemic species) in protected areas, by finding them in national parks or by creating biodiversity sanctuaries that contain viable populations; (2) inventory and explore sites of special interest (such as inselbergs, caves, waterfalls) outside the national parks to detect populations and species of possible conservation concern; (3) document possible short-term and long-term conservation threats in each of Gabon's national parks.

Currently, Gabon is trying to diversify its economy, predominantly based on oil and logging industries, alternatives like ecotourism are highly encouraged, and good species lists for parks and herp viewing are a possible ecotouristic product.

For more information, please see the full report by Pauwels & Rödel (2006) or contact Olivier S.G. Pauwels at *osgpauwels@yahoo.fr*.

Acknowledgements

OSGP's research is supported by the Smithsonian Institution / Monitoring and Assessment of Biodiversity Program and grants from Shell Foundation and Shell Gabon. This publication is contribution 82 of the Gabon Biodiversity Program.

References

Anderson, S. 2002. Identifying important plant areas. *Annual Review of Plantlife International* **2002**: 1-52.

Burger, M., Pauwels, O.S.G., Branch, W.R., Lötters, S. & Rödel, M.-O. 2005. The Amphibia of Gabon: still a time for great discoveries. Pp. 123-124 *in*: Abstracts of the Fifth World Congress of Herpetology, 19-24 June 2005, Stellenbosch, South Africa.

Burger, M., Pauwels, O.S.G., Branch, W.R., Tobi, E., Yoga, J.-A. & Mikolo, E.-N. 2006. An assessment of the amphibian fauna of the Gamba Complex of Protected Areas, Gabon. Pp. 297-308 *in*: Alonso, A., Lee, M.E., Campbell, P., Pauwels, O.S.G. & Dallmeier, F. (eds). *Gamba, Gabon: biodiversité d'une forêt équatoriale africaine / Gamba, Gabon: biodiversity of an equatorial African rainforest*. Bulletin of the Biological Society of Washington, Washington **12**.

Frétey, T. & Blanc, C.P. 2000. *Les amphibiens d'Afrique centrale. Liste faunistique*. ADIE, Libreville, 40 pp.

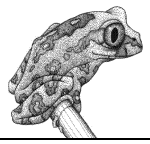
Lötters, S., Rödel, M.-O. & Burger, M. 2005. A new large tree frog from north-western Gabon (Hyperoliidae: *Leptopelis*). *Herpetological Journal* **15**: 149-152.

Ohler, A. 1999. Une nouvelle espèce du genre *Leptodactylodon* (Arthroleptidae,Astylosterninae) du Gabon. *Alytes* **17**: 73-80.

Pauwels, O.S.G. & Rödel, M.-O. 2006. Amphibians and national parks in Gabon, western Central Africa. *Herpetozoa* **19** (in press).

Rödel, M.-O. & Pauwels, O.S.G. 2003. A new *Leptodactylodon* species from Gabon (Amphibia: Anura:Astylosternidae). *Salamandra* **39**: 139-148.

Rödel, M.-O., Schmitz, A., Pauwels, O.S.G. & Böhme, W. 2004. Revision of the genus *Werneria* Poche, 1903, including the descriptions of two new species from Cameroon and Gabon (Amphibia: Anura: Bufonidae). *Zootaxa* **720**: 1-28.



The protection of threatened amphibians In Colombia

The Central Cordillera of Colombia is a 650 km-long mountain range that spurs northwards from the bifurcation of the northern Andes. Its diverse topography, broad altitudinal span and great climatic variations support a wide variety of ecosystems and associated high levels of endemism. Topographical and ecological isolation from other Andean ranges by the arid Cauca and Magdalena river valleys, which flank the Cordillera, has accentuated local endemism. Above 1000 m asl, the c.41,000