

froglog

www.amphibians.org

News from the herpetological community

The new face of the ASG



“Lost” Frogs

The global search comes to an end. Where next?



Red List

Updating South Africa's Red Lists.

Is there a decline of amphibian richness in Bellanwila_Attidiya Sanctuary?

D. M. S. Suranjan Karunarathna and A. A. Thasun Amarasinghe

Sri Lanka is not isolated from the current global period of mass extinctions (Achard et al., 2002; Jenkins, 2003). Already 21 endemic amphibian species have gone extinct (Stuart et al., 2004; Manamendra-Arachchi and Pethiyagoda 2005; Meegaskumbura et al., 2007). Sri Lanka has a variety of wetland ecosystems, the Bellanwila-Attidiya Sanctuary (BAS) (altitude: 5 m; 60 51' Northern latitudes and 79 53' Eastern longitudes) in Colombo district of Western Province (Figure 1), Sri Lanka is among the most important. It is listed in the directory of



Figure 1. Unplanned garbage dumping area in the BAS. Credit: D.M.S.S. Karunarathna

Asian wetlands by the IUCN in 1989. According to the latest survey, the vertebrates (Table 1) included 11 (7.2%) species of amphibians (Karunarathna et al., 2010). However they failed to record *Duttaphrynus atukoralei*, *Hylarana aurantiaca*,

Sphaerotheca rolandae, *Philautus leucorhinus* and *Philautus variabilis*, species that were previously recorded by Goonatilake et al. (2001) during a survey in 1995-1998. The latter 2 species are currently known as extinct.

According to Karunarathna et al. (2010) *Pseudophilautus* (earlier *Philautus*) *popularis* was the only shrub frog recorded in BAS (Figure 2). However we believe the previous authors, Goonatilake et al. (2001) may misidentified another two *Pseudophilautus* species now recognizing from another name or extinct before naming them. However, both figures (fig. 12 & 13)



Figure 2. *Pseudophilautus popularis* only known shrub frog in BAS. Credit: D.M.S.S. Karunarathna

in Goonatilake et al. (2010) seem to be *Pseudophilautus popularis*. Also, we do not believe *Duttaphrynus* (earlier *Bufo*) *atukoralei* was correctly recorded from BAS. Considering the distribution pattern of this species, the authors may have misidentified darker juveniles of *Duttaphrynus melanostictus* as *Duttaphrynus atukoralei*. For *Hylarana* (earlier *Rana*) *aurantiaca* also we assume they misidentified the darker form of *Hylarana gracilis*. The other remaining species *Sphaerotheca rolandae* and *Polypedates maculatus* are also doubtful and may have been misidentified: both figures (see fig. 14 & 15) in Goonatilake et al. (2010) seem to be the same species *Polypedates cruciger*.

Finally, after critically comparing the species list, it appears that the amphibian species richness was not declined during 10 years [in 1995-1998 according to Goonatilake et al. (2001) and

in 2005-2006 according to Karunarathna et al. (2010)] in BAS. Therefore it would be interesting to study how the amphibian community adapted to rapid changing environment in BAS during 1995-2005 by changing the species assemblage while maintaining overall species richness.

Acknowledgements

We would like to thank Lee Harding for reviewing the manuscript.

References

Achard, F.; H. D. Eva; H. Stibig; P. Mayaux; J. Gallego; T. Ricahards & J. Malingreau. 2002. Determination of deforestation rates of the world's humid tropical forests. *Science* 297: 999-1002.

Goonatilake, W. L. D. P. T. S. D. A.; L. J. K. R. Perera & D. E. Gabadage, 2001. Amphibians of Bellanwila-Attidiya Sanctuary. *Loris* 22 (5): 10-14.

Jenkins, M. 2003. Prospects for Biodiversity. *Science* 302: 1175-1177.

Karunarathna, D. M. S. S.; A. A. T. Amarasinghe; D. E. Gabadage; M. M. Bahir & L. E. Harding. 2010. Current status of faunal diversity in Bellanwila-Attidiya sanctuary, Colombo district - Sri Lanka. *Taprobanica* 2 (1): 48-63+2pls.

Manamendra-Arachchi, K. & R. Pethiyagoda. 2005. The Sri Lankan shrub-frogs of the genus *Philautus* Gistel, 1848 (Ranidae: Rhacophorinae), with description of 27 new species. In: Yeo, D. C. J., P. K. L. Ng and R. Pethiyagoda (Eds.). Contributions to biodiversity exploration and research in Sri Lanka. The Raffles Bulletin of Zoology, Supplement No. 12: 163-303.

Meegaskumbura, M.; K. Manamendra-Arachchi; C. J. Schneider & R. Pethiyagoda. 2007. New species amongst extinct shrub frogs (Amphibia; Rhacophoridae; *Philautus*). *Zootaxa* 1397: 1-15.

Stuart, S.; J. S. Chanson; N. A. Cox; B. E. Young; A. S. L. Rodrigues; D. L. Fischman & R. W. Waller. 2004. Status and trends of amphibian declines and extinctions worldwide. *Science*, 306: 1783-1786.

	Species Name	Common Name
Family - Bufonidae		
1	<i>Duttaphrynus melanostictus</i>	Common house toad
Family - Dicroglossidae		
2	<i>Euphlyctis cyanophlyctis</i>	Skipper frog
3	<i>Euphlyctis hexadactylus</i>	Sixtoe green frog
4	<i>Fejervarya limnocharis</i>	Common paddy field frog
5	<i>Hoplobatrachus crassus</i>	Jerdon's bull frog
Family - Microhylidae		
6	<i>Kaloula taprobanica</i>	Common bull frog
7	<i>Microhyla rubra</i>	Red narrow mouth frog
8	<i>Ramanella variegata</i>	White-bellied pugsnout frog
Family - Ranidae		
9	<i>Hylarana gracilis</i>	Sri Lanka wood frog E
Family - Rhacophoridae		
10	<i>Pseudophilautus popularis</i>	Common shrub frog E
11	<i>Polypedates cruciger</i>	Common hour-glass tree frog E

Table 1. List of the Amphibian species recoded from Bellanwila-Attidiya sanctuary (BAS). (Abbreviation: E - Endemic species).