

A lost frog in the lost world?

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Allobates amissibilis sp. nov., newly discovered micro-endemic frog species.
Credit: M.Hoelting&R.Ernst/Senckenber

Ecotourism and Conservation - Can it work? In the context of a study in the forests of Central Guyana, a team of scientists from the Senckenberg Research Institute in Dresden investigated this very question and by chance found a previously undiscovered species of frog that only exists

in a very confined area of the so-called Iwokrama Forest. The related study was published in the scientific journal "*Organisms, Diversity and Evolution*".

The Lost World, a famous novel released by the renowned British author Sir Arthur Conan Doyle in 1912, is set in to what, even today, is still a virtually forgotten and neglected area of our planet, the Guiana Shield in the north of South America.

The region accounts for more than 25 percent of the world's tropical rain forests, and is one of the four remaining extensive pristine forested areas left in the world (Amazon, Congo, Papua New Guinea and Guiana Shield).

In a study sponsored by the Stiftung Artenschutz [Species Conservation Foundation] and the Verband Deutscher Zoodirektoren [Association of German Zoo Directors], the Dresden team, led by biologists Dr. Raffael Ernst and Monique Hölting investigated whether conservation of amphibians and ecotourism can be reconciled in the forests of Guyana. The investigations are being carried out in close co-operation with the international not-for-profit organization Iwokrama International Centre for Rain Forest Conservation and Development. Their idea is to test the concept of a truly sustainable forest, where conservation, biodiversity safeguarding, environmental balance and economic use can be mutually reinforcing. Beside forms of [sustainable forest management](#), ecotourism concepts are also being tested. This is also true of the project area, Turu Falls, at the foot of the Iwokrama Mountains in the so-called Iwokrama Forest of Central Guyana.

The original aim of the study was to investigate the populations of Hoogmoeds harlequin frog (*Atelopus hoogmoedi*), in order to find out whether these morphologically very variable frogs may be affected by the planned tourism activities. The results will lead in the medium term

to a sustainable development plan for the area, with *Atelopus* receiving the role here of a so-called flagship species, i.e. a species which stands as representative for the protection of the entire area.

A frog that is virtually already lost

During the fieldwork for this project, the researchers were struck by an inconspicuous brown frog, only the size of a thumbnail, which they could not assign to any known species. As it turned out, it was indeed a hitherto undescribed species of poison dart frog which is now being scientifically described jointly by Dresden and Belgian scientists.

As inconspicuous as the frogs appear, they are unique. To date, only three species of the genus *Allobates* are known from Guyana, one of which, the Cuckoo frog *Allobates spumaponens* Kok & Ernst 2007, was described for the first time by the same team in 2007. Moreover, the newly discovered little [frog](#) is the third known micro-endemic species, i.e. which only occurs in the very small area of the Iwokrama Mountains. So far, only a gecko and a caecilian, a legless amphibian, are known from this area as having a similarly limited distribution.

Because of their limited distribution and usually small total population sizes, micro-endemic species are particularly vulnerable to changes in their environment. It is therefore questionable whether the use of the area as a destination for ecotourism will not ultimately lead to the loss of a species, which has only just been discovered and thus has been made accessible to scientific investigation. In order to draw attention to this fact, researchers have given the little amphibian the distinctive name *Allobates amissibilis* (in Latin "that may be lost"). We must nevertheless still hope that not least due to the research work of the Dresden team, all is not lost for the forgotten world in the north of South America.

The Guiana Shield: Worthy of protection

Not least because of the high number of endemic species, the region is one of the most important centres of biodiversity in the tropics of the New World. Even though the forests of the Guiana Shield have had among the lowest deforestation rates of the world, with very little change over the past decades, rapid economic and social changes are posing increasing pressures on these relatively wellconservedforest ecosystems. The Guianas are at a crossroads concerning decisions and tradeoffs among utilisation, conservation and preservation of their forests and thus substantial parts of the region's biodiversity.

Provided by Senckenberg Research Institute and Natural History Museum

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