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## Tree-frog biodiversity warning for Amazon



Amazonian tree-frogs are exceedingly well established

Tree-frog hot spots in the Amazon have been established over tens of millions of years, say scientists.

To explain why some areas have greater species richness, experts analysed the distribution of 360 tree-frog species.

They found that the most diverse sites were established over 60 million years ago and more recently colonised areas had fewer unique species.

Researchers suggest this is evidence that damaged rainforest could take millions of years to recover.

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### TREE-FROG FACTS



- The Amazonian region of Colombia has the highest tree-frog species richness on the planet
- Globally, species can vary dramatically. The gladiator frog pictured has enlarged spiny "thumbs" for fighting
- Tree-frogs can range in size from roughly palm sized to roughly thumbnail sized
- [Watch amazing video of frogs on the move](#)
- [Explore the Amazon](#)

Scientists from Stony Brook University, New York, US, aimed to shed light on an ongoing debate with their study published in the journal Ecology Letters.

"The question of why there are more species in the tropics has been a puzzle to biologists for more than 200 years, and a particularly challenging part of the problem is to explain why some sites in the rainforest can have more species than an entire continent," explained principal investigator Dr John Wiens.

In the past, species richness had been attributed to climate and some scientists believed that the biodiversity of tropical rainforest was due to their hot wet conditions.

However, by studying the distribution of 360 different tree-frog species from around the world, Dr Wiens found that not all tropical rainforest habitats were home to many different species.

"We found that many tropical rainforest sites have the same, limited number of tree-frog species as some sites in the temperate zone," he said.

"These tropical rainforest sites with low species diversity are in regions that have been colonized by tree-frogs relatively recently, like northwestern South America, Central America, and Australia."

By analysing the DNA relationships between species, Dr Wiens and his colleagues were able to map tree-frog evolution to understand where and when they originated.

"The loss of species richness during our lifetimes may actually take tens of millions of to recover from"

Dr John Wiens

The team discovered that areas of high species richness were established before the dinosaurs became extinct.

"The Amazon rainforest have large numbers of tree-frog species per site because tree-frogs have been present and producing new species [there] for more than sixty million years," said Dr Wiens.

The suggestion that high species diversity is established over millions of years could have serious implications for vulnerable habitats.

"As more of the Amazon rainforest is being destroyed and more species are driven to extinction by human activities, the loss of species richness during our lifetimes may actually take tens of millions of to recover from," Dr Wiens warned.