

Even more amphibians are endangered than we thought

May 6 2019



A frog. Credit: Pamela González-del-Pliego

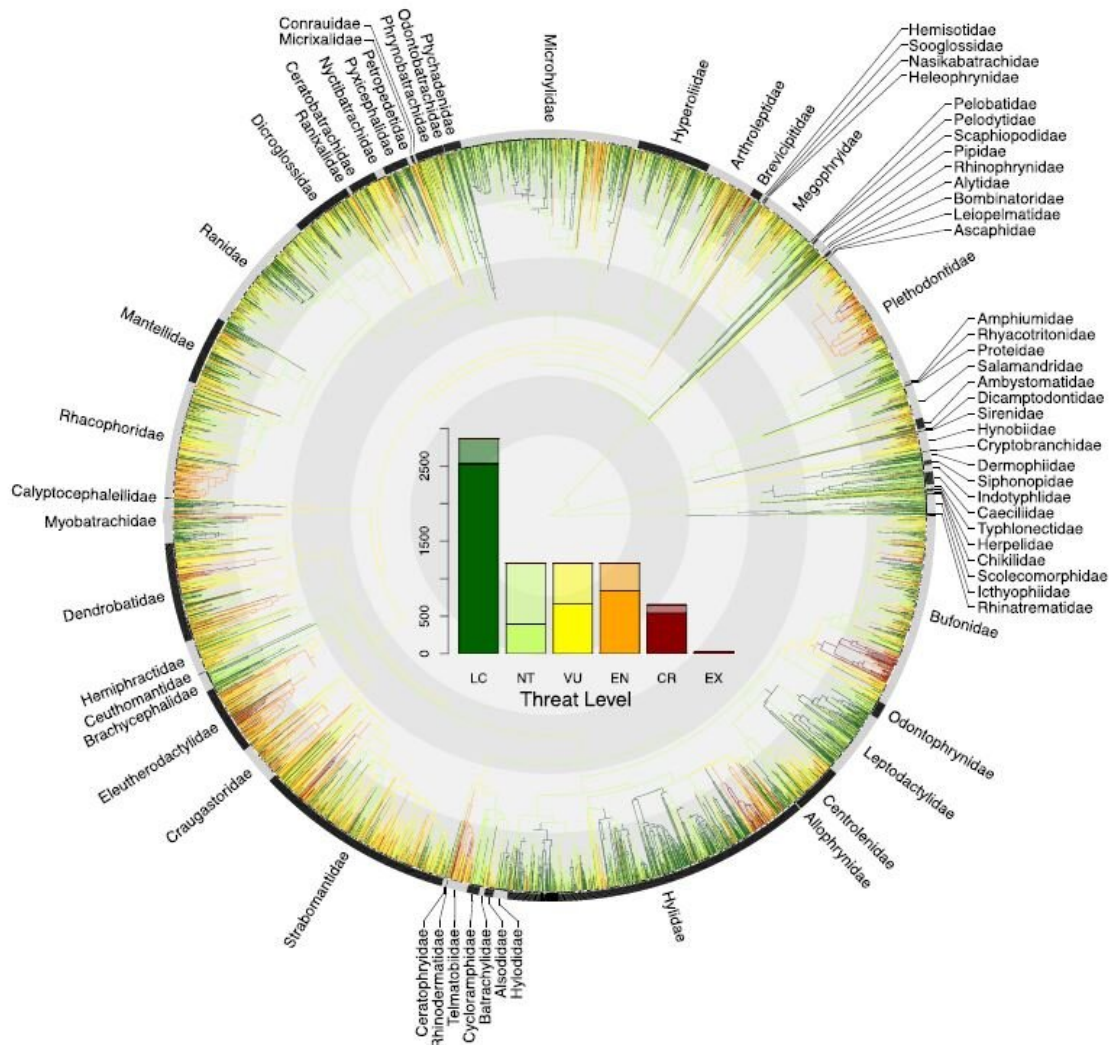
At least a quarter of the world's approximately 8,000 known species of amphibian are recognized as threatened and at risk of extinction. But due

to a lack of data on many amphibian species, only about 44 percent of amphibians have up-to-date assessments on their risk of extinction, compared to nearly 100 percent of both birds and mammals. Now, researchers reporting May 6 in the journal *Current Biology* have used known ecological, geographical, and evolutionary attributes of these data-deficient species to model their extinction risk—and their assessment suggests that at least another 1,000 species are threatened.

"We found that more than 1,000 data-deficient amphibians are threatened with extinction, and nearly 500 are Endangered or Critically Endangered, mainly in South America and Southeast Asia," said Pamela González-del-Pliego of the University of Sheffield and Yale University. "Urgent conservation actions are needed to avert the loss of these [species](#)."

The lack of information on these species results from high rates of new species description together with a lag in assessment rates in the last 15 years, she explains. All told, about 2,200 [amphibian species](#) had been deemed data deficient. Their extinction risk status simply wasn't known.

To make predictions about the status of those data-deficient species, González-del-Pliego and her colleagues applied what they call a trait-based spatio-phylogenetic statistical framework. In other words, they used what is known about the ecology, geography, and evolutionary attributes of these species, together with those attributes' known relationship to extinction risk, to predict whether each of those little-known species was likely to be threatened with extinction and which were not.



The distribution of frogs at risk of extinction. Credit: González-del-Piego et al. / *Current Biology*

Overall, their calculations suggest that half of the ~2,200 data-deficient species are threatened with [extinction](#), primarily in the Neotropics and Southeast Asia. About 500 species are likely Endangered or Critically Endangered, they report. Three may be extinct already.

Their findings suggest that some of the most [vulnerable species](#) may also

be the most poorly known. But there is a positive side to the new findings, the researchers note: at least in some parts of the world, efforts to protect species known to be under threat might benefit threatened but data-deficient species as well.

"In the Neotropics, the species that we know are threatened have very similar geographical distributions compared to the data-deficient species predicted to be threatened," González-del-Pliego said. "Therefore, if we try and conserve the areas where current threatened species are, we will be protecting the data-deficient species as well."



A frog. Credit: Robert Freckleton

The same cannot be said of amphibians living in Southeast Asia and Central Africa, however, due to poor overlap in the distribution of data-deficient and known threatened species. The bottom line, González-del-Piego says, it that the "percentage of threatened amphibians is much higher than we previously knew."

She says that the new predictive evidence should now be used to make informed decisions about which species and regions to target. "We need to move quickly to consider amphibians as a high conservation priority and integrate data-deficient species into conservation strategies," González-del-Piego said.

More information: *Current Biology*, González-del-Piego et al.: "Phylogenetic and trait-based prediction of extinction risk for data-deficient amphibians" [www.cell.com/current-biology/f ... 0960-9822\(19\)30403-8](https://www.cell.com/current-biology/fulltext/S0960-9822(19)30403-8) , DOI: [10.1016/j.cub.2019.04.005](https://doi.org/10.1016/j.cub.2019.04.005)

Provided by Cell Press

Citation: Even more amphibians are endangered than we thought (2019, May 6) retrieved 8 May 2024 from <https://phys.org/news/2019-05-amphibians-endangered-thought.html>

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