

## Most of 'missing species' live in known hotspots, study finds

July 4 2011

---

Most of the world's "missing" or undiscovered species live in regions already identified by scientists as conservation priorities, according to a new study published this week in the journal *Proceedings of the National Academy of Sciences*.

The study's findings suggest recent [conservation efforts](#) have been on target and should reduce uncertainty over global conservation priorities, its team of international authors say. But, they add, the extinction threat for many of the as-yet undiscovered [species](#) is worse than previously feared.

"We show that the majority of the world's 'missing species' are hiding away on some of the most threatened landscapes in the world," says Stuart Pimm, Doris Duke Professor of Conservation at Duke University's Nicholas School of the Environment. "This considerably increases the number of threatened and endangered species around the world."

With limited resources and accelerating threats to nature, conservation biologists have long sought to identify areas around the world where effective conservation actions could save the most species. Biodiversity hotspots — places with extreme rates of habitat loss as well as unusually high numbers of endemic species — are priorities.

The problem is that knowledge of species is seriously incomplete — many species are as-yet unknown.

"We know we have an incomplete catalogue of life," says lead author Lucas Joppa of Microsoft Research in Cambridge, U.K., who received his PhD in ecology from Duke in 2009. "If we don't know how many species there are, or where they live, then how can we prioritize places for conservation? What if the places we ignore now turn out to be those with the most unknown species?"

To address this dilemma, Joppa and his coauthors created a model that incorporates taxonomic effects over time to estimate how many species of flowering plants, which form the basis of the biodiversity hotspots concept, remain to be discovered in regions around the world. They then compared those estimates with regions currently identified as global conservation priorities. The two sets matched.

Six regions already identified by conservation scientists as hotspots – Mexico to Panama; Colombia; Ecuador to Peru; Paraguay and Chile southward; southern Africa; and Australia – were estimated by the models to contain 70 percent of all predicted missing species. Only two regions with high estimates of missing species – the region from Angola to Zimbabwe, and the northern Palearctic, which encompasses parts of Europe and Asia – contained no biodiversity hotspots.

"It was a huge relief that those places in which we are already investing our resources are also those which house the majority of the world's undiscovered species," says David Roberts of the Durrell Institute of Conservation and Ecology at the University of Kent. "It didn't have to turn out that way!"

Norman Myers of Oxford University and the originator of the "hotspots" idea, says, "these findings really validate all of the time and effort I have put into fighting for the preservation of the world's biodiversity. Now we can get on with trying to save these unique and threatened places."

While showing that conservation action is already directed at the most appropriate places, the study's results bring an increased sense of urgency to the global extinction crisis.

The authors stress that results like these make it even more important to effectively conserve large areas of land.

"How can you save a species you don't even know exists?" asks Joppa. "You can't. But you can protect places where you predict they occur."

Provided by Duke University

Citation: Most of 'missing species' live in known hotspots, study finds (2011, July 4) retrieved 24 April 2024 from <https://phys.org/news/2011-07-species-hotspots.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.