



Species in tropical regions are two to four times more likely to be impacted by climate change.
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Climate Change May Force The Extinction Of One In Three Plant And Animal Species, Study Finds

Madison Dapcevich
Freelance Writer and Fact-Checker

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One-third of the planet's plant and animal species may face climate change-driven extinction by 2070, new research suggests.

Under some climatic scenarios, an analysis of more than 500 species from just about as many sites around the world found that more than half of all species could be lost if global maximum temperatures increase by more than 0.5°C (0.9°F). As many as 95 percent of species could die out if global maximum temperatures see a rise of 2.9°C (5.2°F).

Researchers from the University of Arizona combed through previous data and studies to

examine the local extinctions of 538 species from 581 different locations worldwide, focusing on plant and animal species that were surveyed over long periods of time. Specifically, the team was looking for clues that would help to illuminate what aspects of climate change cause extinctions and what adaptations help a species to survive.

Many species are unable to respond quickly enough to rapidly increasing temperatures. Tropical regions were found to experience between two and four times more localized extinctions due to temperature changes than more temperate locations. Previous studies have suggested that animals will migrate to cooler habitats when their home becomes too hot. In contrast to this, the researchers found that many animals may not be able to disperse quickly enough in order to ensure survival.



The common giant tree frog from Madagascar is one of many species impacted by recent climate change. John J. Wiens

“Our results show that niche shifts have allowed many populations to survive dramatic changes in temperatures. In contrast, dispersal alone may be insufficient to save most species considered here, at least based on their past dispersal rates,” write the authors in the [Proceedings of the National Academy of Sciences](#).

Identifying maximum annual temperatures – a key variable thought to determine where a population will go extinct – may produce false findings as the theory does not incorporate niche shifts, or an animal's ability to disperse to more suitable habitats.

"In a way, it's a 'choose your own adventure,'" said John J. Wiens of the University of Arizona Department of Ecology and Evolutionary Biology in a [statement](#). "If we stick to the Paris Agreement to combat climate change, we may lose fewer than two out of every 10 plant and animal species on Earth by 2070. But if humans cause larger temperature increases, we could lose more than a third or even half of all animal and plant species, based on our results."

Future loss will largely depend on how much the climate warms and how quickly that warming occurs, but it remains generally unclear which changes will drive extinctions. The authors note that successful implementation of the Paris Agreement could help "reduce extinctions considerably" to possibly 16 percent of species or less.



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