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Mass Extinction Of Lizards In The Near Future As A Result Of Climate Change, Research Suggests

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A [mass extinction](#) of lizard species is a real possibility in coming decades as a result of climate change, new research from the University of Lincoln has found. Certain lizard species have taken a one-directional evolutionary path that involves them giving live birth rather than laying eggs, this has allowed lizards to live further north than possible if they were laying eggs. But this evolutionary path is apparently irreversible, once a lizard species has developed it, they lose the ability to go back to laying eggs, which would be necessary for them in a warmer climate. The speed at which climate change is occurring largely precludes many species from simply changing where they live, it's possibly for some species, but many will very likely go extinct as a result of not being able to extend their range to more appropriate climates. The researchers predict that dozens of lizard species may become extinct within only the next 50 years.



It's been observed all over the globe that lizards with lizards with viviparous reproduction (retention of embryos within the mother's body, [such as in skinks](#)) are doing poorly with regards to changing weather patterns. And the new research shows that is likely their viviparous reproduction, an adaptation that has been key to their success in the past, that is limiting their ability to adapt.

"Researchers, including academics from the University of Exeter, investigated the hypothesis that historical invasions of cold climates by Liolaemus lizards — one of the most diverse groups of vertebrates on earth — have only been possible due to their evolution to viviparity (live birth) from oviparity (laying eggs). Remarkably, once these species evolve viviparity, the process is mostly irreversible and they remain restricted to such cold climates."

"By analysing this evolutionary transition in the lizards' reproductive modes and projecting the future impact of climate change, the scientists discovered that increasing temperatures in the species' historically cold habitats would result in their areas of distribution being significantly reduced. As a consequence, if global warming continues at the same rate, viviparous lizards are facing extinction in the next few decades."

Lead author, Dr. Daniel Pincheira-Donoso said: "Lizards' reproduction is largely linked to climatic temperatures and viviparous species are usually found in cold environments. When reptiles initially moved to colder areas they needed to evolve emergency measures to succeed in these harsh places, and we believe viviparity is one of these key measures. However, this transition is mostly one-directional and unlikely to be reversed. Rapid changes in the environment's temperature would demand rapid re-adaptations to secure the species' survival. Through the research we found that over the next 50 years nearly half of the area where these species occur may disappear, causing multiple extinctions due to climate change."

The general conclusion of the research is that "although viviparity allowed lizards in the past to invade and adapt to live in cold environments, and was therefore a key trait for evolutionary success, it will now ultimately lead to multiple events of extinction."

Dr Pincheira-Donoso said: "These lizards are one of the most diverse groups of animals, and are able to adapt to remarkably diverse conditions. Unfortunately, a reduction in cold environments will reduce their areas of existence, which means that their successful evolutionary history may turn into a double-edged sword of adaptation. Their extinctions would be an atrocious loss to biodiversity."

Dr Dave Hodgson, from the University of Exeter, said: "Climate change must not be underestimated as a threat to modern patterns of biodiversity. Our work shows that lizard species which birth live young instead of laying eggs are restricted to cold climates in South America: high in the Andes or towards the South Pole. As the climate warms, we predict that these special lizard species will be forced to move upwards and towards the pole, with an increased risk of extinction."

The new research was just published in the journal *Global Ecology and Biogeography*.

Source: [University of Lincoln](#)

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About Nathan

For the fate of the sons of men and the fate of beasts is the same; as one dies, so dies the other. They all have the same breath, and man has no advantage over the beasts; for all is vanity. - Ecclesiastes 3:19

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