

Climate warming gives gecko hatchlings a shaky start in life

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This gecko has good sticking power thanks to the van der Waals force. Credit: Public Domain/Wikipedia

Velvet gecko hatchlings born in a future warming climate may be slower learners and have lower overall survival rates, new research suggests.

Scientists from the UTS School of Life Sciences, conducting what is believed to be the first study of its kind, demonstrated that incubation temperatures affect the lizard's learning ability and its subsequent survival when released in the wild. The results are published in the Royal Society journal *Biology Letters*.

The scientists incubated velvet gecko eggs under conditions that mimicked current (cold) and future (hot, 2050) nest temperatures. After a series of learning trials in the laboratory, involving testing how quickly the hatchlings could locate a suitable refuge during a simulated predator attack, hatchlings were released and their survival in the wild monitored.

Wildlife ecologist Associate Professor Jonathan Webb, lead researcher on the project, said the trials tested the lizards' spatial memory, an important trait for survival.

"Lizards are very good spatial learners. Most reptiles are on their own once they hatch so they need to be able to locate shelter quickly when fleeing from predators," he said.

"Our results show that hatchlings from hot-incubated eggs were slower learners than their cold-incubated counterparts and, importantly, in the wild the slower learners had lower [survival rates](#)."

This suggests that [spatial memory](#) affects cognitive function in the geckos and that faster learners may have a better chance of evading predators.

PhD candidate Buddhi Dayananda, lead author on the paper, said climate warming could generate new challenges for lizards in the future and the impact of incubation temperature on reptiles' [learning ability](#) clearly deserves further study.

"We don't know if females will adapt to a warming climate by choosing cooler nesting sites. It may be the only option they have to ensure their offspring can cope with changing environments," he said.

More information: Buddhi Dayananda et al. Incubation under climate warming affects learning ability and survival in hatchling lizards, *Biology Letters* (2017). [DOI: 10.1098/rsbl.2017.0002](https://doi.org/10.1098/rsbl.2017.0002)

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