

Snakes meet their match in offspring-protecting lizards

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(Phys.org)—A particular species of lizard will aggressively defend their eggs from predators such as snakes, a James Cook University researcher has found.

Dr David Pike, lecturer in JCU's School of Marine and [Tropical Biology](#), has helped produce a study titled "Predation drives inter-population differences in parental care expression," which was recently published in the British-based [Journal of Animal Ecology](#).

Dr Pike said the research, which was conducted on Orchid Island off Taiwan, found mother lizards attacked [snakes](#) that attempted to raid their nest.

The [species](#) involved were the Asian long-tailed skink (*Eutropis longicaudata*) and an egg-eating snake (*Oligodon formosanus*).

"Among lizards in general, it is quite rare to find a species that stays with the eggs until they hatch, but the long-tailed skink that we studied is among the few species that do guard their eggs," Dr Pike said.

"We found that the lizards will aggressively defend their eggs from [predators](#) - even snakes."

Dr Pike said it might surprise people that lizards could deter a predator as formidable as a snake.

"Many snake species readily eat lizards, so with the species we studied, we found we were either dealing with a very unique lizard or very wimpy snakes," he said.

"Lizards can be very aggressive towards snakes, as most mothers can be when provoked, but this snake species was only interested in eating the lizard eggs, and not the mother lizard."

The physical attributes of the two were also a factor in the phenomenon, he said.

"The lizards are also pretty big and the snakes don't get very big. This allows the lizards to attack snakes without fear of being eaten," he said.

"The lizards understand that the snakes will not eat them, and as a consequence will fiercely attack snakes that enter the nest. "

"By deterring snakes these mothers ensure that their eggs will hatch."

Dr Pike said an interesting part of this unusual lizard-snake relationship was that the Asian long-tailed skink only protected its eggs on Orchid Island.

"On nearby islands, this same lizard species lays the eggs and leaves them to face nature's fate alone," he said.

New research had shed light on why this behaviour had evolved in nature, he said.

"The reason that mother lizards attack snakes is very clear – mothers who protect their eggs have more babies than mothers who abandon them. This behaviour happens only on Orchid Island because there are many more egg-eating snakes there than most other locations.

"In fact, when researchers transferred individual lizards from their home island with very few snakes to Orchid Island, which has lots of snakes, female [lizards](#) changed their behaviour and became good mothers."

In contrast, when the nest-defending mothers were moved to islands with few snakes, these females decided not to guard their eggs, because of the small chance that they would eaten by snakes.

"So, it turns out that almost all long-tailed skinks can and will be good mothers by protecting their [eggs](#) from snakes, but only when there are lots of snakes hanging around," he said.

"This shows that motherhood can be dependent on the risks that the offspring face during their most vulnerable period, the egg stage, and can vary according to the threat of predation."

Dr Pike said he had been involved in the study for two years, but his collaborators in Taiwan had been studying the Asian long-tailed skink for 15 years.

Provided by James Cook University

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