

Research could help save tuatara from extinction

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(PhysOrg.com) -- Research by Victoria University PhD graduate Kim Miller could help to successfully manage tuatara and skink populations in danger of becoming extinct.

"As habitat loss, predators and disease epidemics threaten [species](#) worldwide, reintroducing animals to the wild is one of the most powerful tools for species conservation," says Ms Miller.

However up until now, translocations of threatened species have generally had low success rates, and little has been known about the causes of failure or reasons for success.

"My research investigated how New Zealand's common conservation practice of reintroducing animals to the wild to start new populations affects genetic diversity in native species such as [tuatara](#) and skinks," she says.

"Small populations lose genetic diversity, which reduces their ability to adapt to new threats and puts them at heightened risk of extinction."

Although 30 animals of any one species are typically released, Ms Miller's research found that 50 or more would be a better number.

"For species with a low reproductive output, high mortality rates after release, highly polygynous mating systems and high levels of background in-breeding, releasing a larger group is more effective in improving the

long-term maintenance of diversity."

Ms Miller says her research improves reintroduction planning for many species by offering guidelines for maximising genetic diversity and managing populations over time.

"Effective management of [genetic diversity](#) is central to the success of reintroduced populations in both the short and long term."

Born in New Jersey, USA, Ms Miller completed her undergraduate degree at the University of Delaware in cell and molecular biology and genetics.

She came to New Zealand because of a desire to research native reptiles. "New Zealand is well known for its conservation efforts with [reptiles](#), plus the chance to work with an amazing team at Victoria was too good to turn down."

Provided by Victoria University of Wellington, New Zealand

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