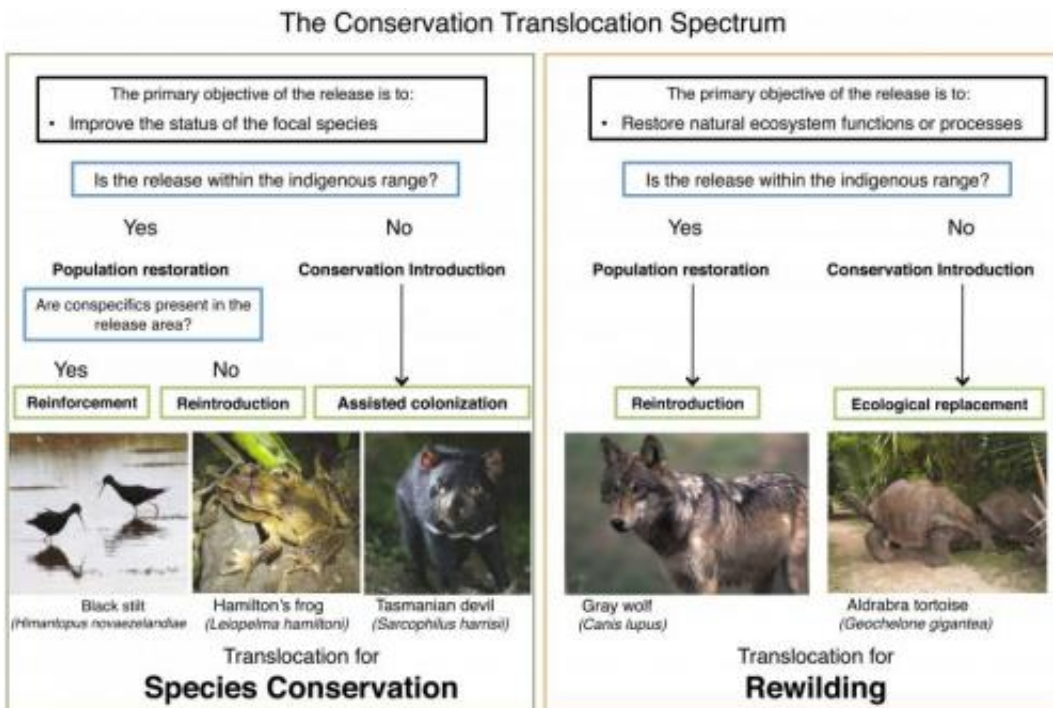


# No returning to Eden: Researchers explore how to restore species in a changing world

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This figure illustrates the spectrum of conservation translocation, which is the movement and release of plants and animals to re-establish new populations. Some forms of translocation are controversial, but reversing the increasing rate of global biodiversity losses may not be possible without embracing them. Credit: Philip Seddon, University of Otago

Reversing the increasing rate of global biodiversity losses may not be possible without embracing intensive, and sometimes controversial, forms of threatened species management, according to a New Zealand

zoologist and colleagues writing in the leading international journal *Science*.

In a review article appearing in today's edition, Professor Philip Seddon of the University of Otago and his co-authors examine the growing role that 'conservation translocation', which is the movement and release of plants and animals to re-establish new populations, is playing in efforts to combat biodiversity loss.

The researchers write that the traditional goals of "having self-sustaining wildlife populations within pristine landscapes untouched by human influence" are "increasingly unobtainable".

They instead suggest that creating 'wildness' rather than restoring 'wilderness' is the most practical way forward. This 'rewilding' approach may involve translocations to restore ecological processes, such as predator-prey interactions, within landscapes shared by humans and wildlife.

Reintroduction of species previously indigenous to an area has been the most widely applied type of translocation, but Professor Seddon says reviews of reintroduction outcomes have shown generally low levels of success.

"Also, such reintroductions are often biased towards 'charismatic' animals, such as large mammals, regardless of how endangered they are compared to other species."

Professor Seddon says that one controversial form of translocation on the rise are so-called 'conservation introductions', through which species are brought into areas outside of their historic range for conservation benefit.

This includes the contentious practice of ecological replacement, where an appropriate substitute species is released to restore an ecological function lost with the extinction of the original species.

"Examples include the release of exotic species of giant tortoise to restore the grazing functions and seed dispersal lost through tortoise extinctions on islands in the Indian Ocean," he says.

Conservation introduction can also involve assisted colonisation, where species are moved outside their range to prevent extinction due to threats in their native habitat.

"Examples of this include moving native birds, such as kakapo to predator-free offshore islands to protect them from exotic predators in mainland habitat. Other such efforts include establishing a facial cancer-free colony of Tasmanian Devils on Maria Island off the coast of Tasmania."

Professor Seddon says that the major challenge is how to apply the range of translocation tools available to maximise conservation benefit while minimising the risk of unintended consequences.

"The prospect of bringing back extinct species through advanced technologies creates a further conundrum. If potential de-extinction of multiple species does become a reality, which [species](#) should be resurrected, and which habitats should they be introduced to?"

In their conclusion, Professor Seddon and his co-authors write that conservation translocation projects can provide a "powerful means to reconnect people with their natural heritage, to engage them as conservation partners, and make them stewards of the wild animals and habitats around them".

**More information:** [www.sciencemag.org/lookup/doi/...  
1126/science.1258601](http://www.sciencemag.org/lookup/doi/10.1126/science.1258601)

Provided by University of Otago

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