

# A genetic management strategy for two extinct-in-the-wild reptiles



**Common name:** Christmas Island blue-tailed skink & Lister's gecko

**Scientific name:** *Cryptoblepharus egeriae* & *Lepidodactylus listeri*

## CONSERVATION BACKGROUND

The Christmas Island blue-tailed skink and the Lister's gecko are listed as Critically Endangered, and are now presumed extinct-in-the-wild (last confirmed sighting in 2010 and 2012, respectively). Captive breeding populations exist for both species and have now peaked at over 1000 species. Understanding genetic profiles will aid in guiding releases and future management strategies to maximise conservation outcomes.

## PROJECT AIMS

1. Inform the current genetic diversity (allelic and heterozygosity) at Taronga and Christmas Island captive programs
2. Understand the retention of genetic diversity in the program under differing management strategies and population capacities

## IMPLICATIONS FOR SPECIES CONSERVATION

Two high-quality reference genomes have been produced and published. Population genetic data has now been generated for Parks Australia and Taronga Zoo for managing remaining animals in captive populations.

The team are using this data to answer the following questions for both species:

- What diversity came in with the last animals that were brought in from wild?
- Was that diversity maintained over 10 years of breeding program?
- Are there differences between the breeding strategies on Christmas Island versus Taronga Zoo? Can improvements be made?

And the following questions for the Christmas Island blue-tailed skink:

- What diversity was released during the introduction to Cocos Keeling Island?
- Is the released diversity present in offspring born on Cocos?
- What does this mean for the species long term?

This information will be fed back to Parks Australia & Taronga to adjust their management practices.

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**Photo credit:** Director of National Parks

