

# Macquarie Island restored through pest eradication

## Project 6.4



Regeneration on Macquarie Island after eradication (Razorback 2005 and 2014). Images Keith Springer

Macquarie Island is located in the Southern Ocean about halfway between New Zealand and Antarctica. It comprises a land area of 12,865 ha, with many small offshore rock stacks. It is a Tasmanian Nature Reserve and a World Heritage Site.

Soon after its discovery in 1810, its rich seal and penguin stocks were subject to massive exploitation, Human activity introduced mammals to Macquarie Island during the 19th Century, and they quickly became established. From the 1950s it was recognised that the introduced pests – rabbits, ship rats, mice and cats – were seriously impacting native vegetation and fauna.

Two endemic land bird taxa have been extinct since the late 19th century due to pest predation – the Macquarie Island parakeet and the Macquarie Island rail.

### Restoration by eradication

The management goal was to eradicate mammalian pests in order to protect many of the island's threatened and declining plant and animal species.

In this case, success was defined as the eradication of every single individual of the pest species. Any other outcome is failure.

Cats were eradicated first, with control measures starting in the 1970s and culminating in eradication by 2001.

Attention then turned to the eradication of the remaining three introduced animal species in a combined operation. Once thought impossible to achieve, it was made feasible by the early 2000s due to advances in methodology and technology. Tasmania Parks and Wildlife Service declared the successful eradication of rabbits, rats and mice in April 2014.

### Gauging success

The Macquarie Island Pest Eradication Project can be considered successful on several grounds.

The project eradicated rabbits, ship rats and mice from the island. Macquarie Island is the largest island worldwide where these three species have been eradicated.

The project succeeded in increasing the capacity of the Tasmania Parks and Wildlife Service to undertake island pest eradications. Cat and rodent eradications have been achieved or are now underway on other Tasmanian islands.

Native species are recovering. Baiting saw some non-target mortalities of species including the threatened northern giant petrel, although its breeding population is now back to pre-baiting levels. BirdLife Australia downlisted eight seabird taxa on the Australian IUCN Red List in 2016 due to the reduction of threats on Macquarie Island.

As a result of these systematic and strategic eradications, the ecosystems of Macquarie Island are recovering rapidly.

### The future

Key to the future is ensuring that pests do not re-establish.

The two extinct endemic land bird taxa both have close relatives elsewhere. These extant species could possibly be introduced to the island to fill the ecological niches their relatives once occupied.

Macquarie Island's recovery is also a symbol of hope for many other islands elsewhere: pests species can be eradicated, and such ambitious eradication programs can achieve lasting and substantial benefits.

### More information

Keith Springer (2018) Eradication of invasive species on Macquarie Island to restore the natural ecosystem. In *Recovering Australian Threatened Species: A Book of Hope*. (Eds S Garnett, P Latch, D Lindenmayer, J Woinarski) pp 13-22. CSIRO Publishing, Melbourne.