

## CASE STUDY

# The island as the unit of management – restoring Lord Howe Island, Australia

### The general issue

Managing invasive species is a means to an end and not an end in itself. Therefore, while many island restoration projects are focused on eradicating a particular pest species - or group of species - programmes are increasingly being initiated that consist of a sequence of 'pest projects', where the whole island is treated as the management unit, with restoration as the ultimate goal.

Important new insights leading to improved effectiveness and efficiencies can be anticipated from such holistic approaches to island management.

### The challenges on Lord Howe Island

Lord Howe Island was one of the last places on earth to be colonised by people. It was only discovered by humans in the late 18th century, and only settled in 1834. It is a remote island some 700kms off the east coast of Australia in the Pacific Ocean. It is only 1455 hectares in extent, but has two high mountains, the most southern coral reef and a large number of endemic plants and animals.

With the arrival of humans came invasive plants (230 species of exotic plants have been recorded) and animals. These brought significant threats to island endemics. Humans, mice, ship rats, feral cats, feral pigs and feral goats together caused the extinction of nine of the 13 endemic terrestrial birds. Remarkably, the cats and pigs were eradicated in the 1980s, and most goats were removed by 2001. Invasive rats and mice, however, continue to threaten native species.

The Lord Howe Island Board consulted Landcare Research on several occasions (on the use of toxins, to plan goat eradication, and to plan rodent management) as part of their ongoing plans to restore the island's biodiversity and protect livelihoods.

Most recently the Board has been considering how to manage the invasive rodents. A particular concern was to assess the costs of an eradication attempt in relation to the anticipated economic benefits from reduced rodent depredation of the seeds of endemic *Kentia* palms - one of the main sources of income for island residents.



*Lord Howe Island, 700kms off the east coast of Australia*

## Our approach

Our report on rodent management options looked at the usual rules and constraints around the feasibility of eradication. We also developed a simple cost-benefit model for the palm seed industry. It was based on the estimated costs of doing nothing, applying several levels of sustained control, or of attempting to eradicate ship rats alone, or both ship rats and mice.

Basically, eradication of the rats alone gave marginally the best cost-benefit outcome, although we noted that eradication of both rats and mice would give optimal benefits to non-market biodiversity values.

## The outcome

The Lord Howe Island Board accepted the desirability of targeting both rodent species and subsequently appointed a project manager to plan the details of the eradication attempt – widespread sowing of toxic baits over an island partially inhabited by people is not a trivial task!

The project has recently received Australia Government funding to progress planning for rodent eradication, including further consultation.

## References

- Eason, C.T. (1996). An evaluation of different rodenticides for use on Lord Howe Island. Landcare Research Contract Report LC9596/102.
- Hutton, I.; Parkes, J.P.; Sinclair, A.R.E. (2007). Reassembling island ecosystems: the case of Lord Howe Island. *Animal Conservation* 10: 22-29.
- Parkes, J.P.; Macdonald, N.; Leaman, G. (2002). An attempt to eradicate feral goats from Lord Howe Island. In: Turning the Tide: the Eradication of invasive species (Ed. Veitch, C.R.; Clout, M.N.). Occasional Paper of the IUCN Species Survival Commission 27: 233-239.
- Parkes, J.; Ruscoe, W.; Fisher, P.; Thomas, B. (2004). Benefits, constraints, risks and costs of rodent control options on Lord Howe Island. Landcare Research Contract Report LC0304/64.

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