

## Conservation vs. Restoration: the battle of the Chathams coxella weevil

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The coxella weevil, *Hadrampus spinipennis*, is a large, flightless weevil endemic to the Chatham Islands, New Zealand. It is specific to the plant host *Aciphylla dieffenbachii*, which only grows on exposed coastal areas, and its distribution is limited to two islands: Mangere and Rangatira. Although both islands were once heavily grazed and farmed, they were turned over as conservation land, and the Department of Conservation started an intensive reforestation program. This study aims to investigate the possible detrimental effects of reforestation on the distribution of *A. dieffenbachii*, and indirectly, the weevil populations and their genetic diversity. An original survey conducted in 1996 of *H. spinipennis* and *A. dieffenbachii* populations on Mangere and Rangatira was repeated in 2010 and 2011 to provide information regarding the conservation status of the weevil. Current distributions of *H. spinipennis* and *A. dieffenbachii* were recorded and tissue samples of 15 weevils from each island were collected for DNA analyses: the mitochondrial gene, CO1, and the nuclear gene, ITSII. Although a decline in *A. dieffenbachii* distribution was found, the weevil population was found to be breeding and surviving on Rangatira. In Mangere, there was a slight decline in the distribution of the plant. Overall, CO1 showed little genetic variation whereas some variation was found in ITS2. It appears that reforestation may constrain weevil populations and alternative plans may be needed to protect the species. However, the lack of genetic variation between the two island populations suggests that management plans may have to consider them as one population.

