

# Aggregated retention and mammal conservation in old-growth forests



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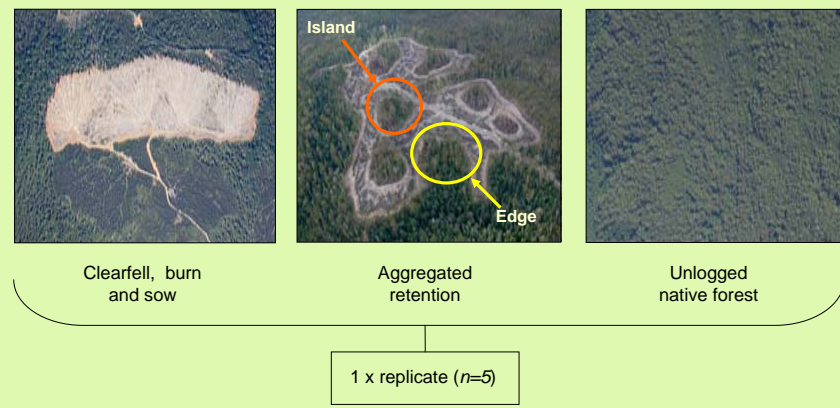
## Introduction

Traditional forestry harvesting (clearfell, burn and sow) of wet old-growth forests generally results in landscapes of even-aged stands of uniform structure. Natural old-growth forests have complex structures, such as tree hollows and coarse woody debris, which provide important habitats for many animals and are rarely created within usual forestry operations. Forestry Tasmania is phasing in a new alternative forestry practice called 'aggregated retention' which maintains island and edge patches of forest (>1ha size) in operational coupes for at least one rotation (~80 years). The objective of this method is to retain old-growth species and structures to provide wildlife habitat, refuges and seed banks for regeneration. Aggregated retention was developed to emulate natural disturbance regimes and to allow old-growth influences to remain within an operational coupe.

While the effects of natural and anthropogenic disturbances and habitat fragmentation on native fauna have been well-studied, little research has been conducted on aggregated retention as this is a relatively new practice in Australia. This project will test if aggregated retention in old-growth forests is an adequate management strategy for conservation of small to medium-sized ground mammals.

## Research questions

- Does species richness differ between clearfell, aggregated retention and unlogged native forest?
- Do species demographics differ between clearfell, aggregated retention and unlogged native forest?
- Does community composition (e.g. specialist vs. generalist) differ between clearfell, aggregated retention and unlogged native forest?



## Acknowledgements

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## Methods

### Large-scale community study

Species richness, species demographics and community composition will be measured through an intensive field program of live-trapping and scat surveys.



Eastern quoll



Long-tailed mouse



36 x Mascot traps



Brushtail possum



Long-nosed potoroo



Swamp rat



Brushtail possum



36 x Elliott traps



Ringtail possum



Southern brown bandicoot

Body condition will be calculated using weight and skeletal measurements.



## Preliminary results

Table 1. Trapping and scat survey results from two completed replicates.

	Clearfell, burn & sow	Aggregated retention	Unlogged native forest
Total number of individuals trapped	31	62	43
Native species trapped	Long-tailed mouse Swamp rat Brushtail possum	Long-tailed mouse Swamp rat Brushtail possum Dusky antechinus	Long-tailed mouse Swamp rat Brushtail possum Eastern quoll Pademelon
Additional species present (scat survey)	Pademelon Bennetts wallaby	Pademelon Bennetts wallaby Rabbit Wombat Quoll	Ringtail possum Long-nosed potoroo

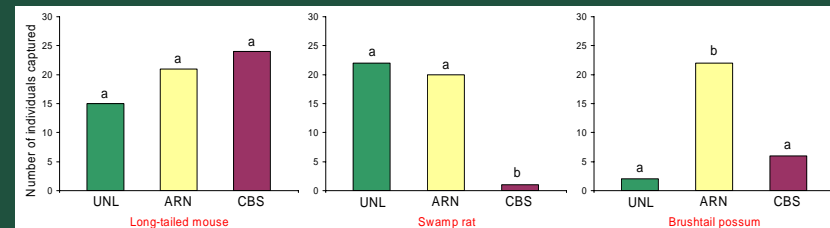


Figure 1. Number of individual animals captured in Elliott and/or Mascot traps in unlogged native forest (UNL) sites, aggregated retention (ARN) coupes and clearfell, burn and sow (CBS) coupes. Data analysed by PROC LOGISTIC where the dependent variable was presence/absence of animals caught over three nights. Results indicate no difference in Long-tailed mice between treatments (Wald  $\chi^2 = 1.505$ ,  $p = 0.47$ ), but there were significant differences in Swamp rats (Wald  $\chi^2 = 8.763$ ,  $p = 0.0125$ ) and Brushtail possums (Wald  $\chi^2 = 15.299$ ,  $p = 0.0005$ ).