

Experimental restoration of a weed-affected forest remnant

Rachel J. Standish and Alastair W. Robertson

Ecology, Institute of Natural Resources,

Massey University, Private Bag 11 222, Palmerston North, New Zealand

Of the ecosystems represented in New Zealand, lowland forests are one of the most fragmented and degraded. The small size of most remaining fragments belies their wealth, in terms of biodiversity values, but contributes much to their declining health. Small fragments are not well buffered against the impacts of humans or introduced vertebrates. Invasive weeds present an additional, sometimes primary threat to the health of a forest remnant.

Tradescantia is a ground smothering weed common to many forest remnants of the North Island and northern South Island. Like other invasive creepers, it has the potential to alter vegetation species richness and abundance, as well as ecosystem function (eg. forest regeneration). Also in common with other invasive creepers *Tradescantia* is difficult to eradicate chemically or mechanically. We are trialling an alternative ‘green’ solution within a *Tradescantia*-affected forest remnant in the Manawatu, New Zealand. The aim of the project is to establish a canopy of natives that suppresses *Tradescantia* through shading, and allows native seedlings to come through. The success of the restoration program depends on answering four sequential questions, only the first of which we can answer at this stage:

1. Can native saplings planted into swards of *Tradescantia* survive and grow?
2. Will planted saplings form a canopy and so overshadow *Tradescantia*?
3. Will *Tradescantia* reduce in biomass in response to reduced light?
4. Will native regeneration occur?

This approach, if successful, will be less harmful to the environment, more user-friendly and requires less follow-up treatment than chemical and mechanical weed control methods. Consequently this approach may be well suited to community groups aiming to restore their local forest remnant. The technique may be applicable to forest remnants with other ground-smothering weeds.