

Impacts of Bridal Creeper Implications for Restoration



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Figure 1. Bridal creeper invasion, Fitzgerald River National Park, W.A.

PROJECT DESCRIPTION

This project is investigating the impacts of bridal creeper invasion and management on plant and insect biodiversity.

- Twenty monitoring plots have been set up in heavily invaded sites and reference sites within southern Western Australia.
- Bridal creeper within these invaded sites are yet to come under substantial attack by the biological control agents.
- Reference sites have minimal bridal creeper cover and are located adjacent to bridal creeper invasions.

Results from initial sampling in Spring 2004 are presented, which relate to differences between vegetation composition and soil conditions.

INTRODUCTION

Bridal creeper (*Asparagus asparagoides*):

- is a weed from southern Africa
- invades disturbed and undisturbed habitats in native bushland (Figure 1)
- now widespread throughout southern Australia
- control is being achieved through the release of three biological control agents (Figure 2).

Will weed impacts be reduced after successful biological control?



Figure 2. The bottom of the photo shows bridal creeper defoliated after infection by a biological control agent, the bridal creeper rust. Growing over the infected bridal creeper is another weed from South Africa, Dolichos pea (*Dipogon lignosus*). (Location: Bremer Bay, W.A.)

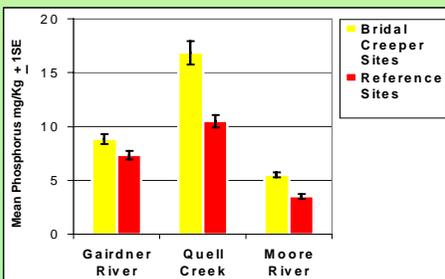


Figure 3. Bridal creeper sites have higher levels of phosphorus available to plants (Colwell method) ($F = 64.87$; d.f. 1,30; $p < 0.001$).

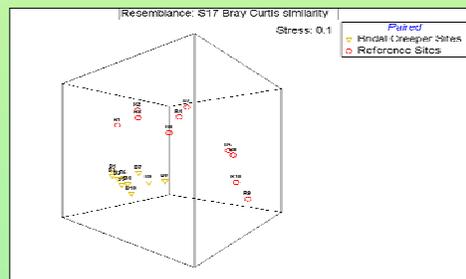


Figure 4. An ordination of sites (N-MDS) showing clear separation of sites based on plant abundance and species composition (ANOSIM $R = 0.729$, $p = 0.002$).

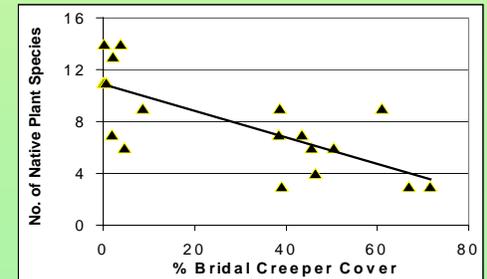


Figure 5. The number of native plant species is negatively correlated to bridal creeper cover ($R^2 = 0.56$; d.f. 1,18; $p < 0.001$).

Bridal creeper sites:

- have higher levels of phosphorus (Figure 3)
- exhibit little natural variation between sites (Figure 4) and
- have a lower number of native plant species (5.7 ± 0.7 compared to 10.7 ± 0.9 in reference sites; $F = 19.36$; d.f. 1,18; $p < 0.001$).

The number of native plant species is also negatively correlated to bridal creeper cover (Figure 5).

The above impacts will have important consequences for the restoration of these invaded areas. Many studies in Australia have reported a positive association between phosphorus and exotic weeds. If other exotic species are favoured and establish quicker than native species, removing bridal creeper may lead to one weed being replaced by another.



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