

# Impact of Bridal Creeper



# on Post-Fire Succession



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## INTRODUCTION & METHODS

- Bridal creeper (*Asparagus asparagoides* (L.) Druce) is a serious environmental weed in southern Australia
- This study aimed to determine the response of a native plant community following fire, with or without the presence of bridal creeper
- Following a wildfire in March 1996, thirty 3 x 3 m plots were established in a mallee remnant near Meningie in south-east South Australia
- Bridal creeper was then removed from half the plots using sponge-applied 33% solution of glyphosate herbicide (360 g L<sup>-1</sup>) + 2% Pulse Penetrant®

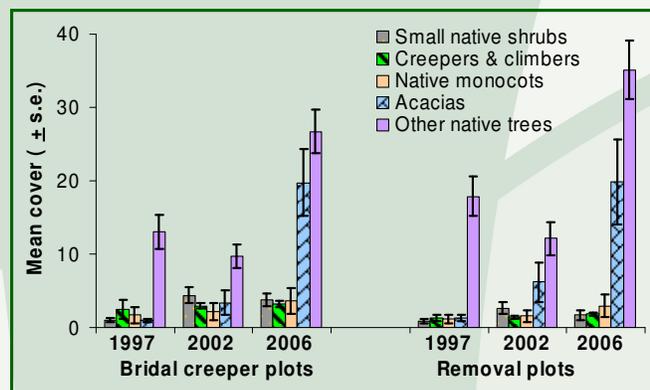


## RESULTS

- In 2006, there was still a significant difference in the density of bridal creeper, with 33.4 ± 5.0 emerging shoots m<sup>-2</sup> in untreated plots compared to 9.1 ± 1.2 shoots m<sup>-2</sup> in removal plots
- The soil where bridal creeper was not controlled had a lower pH and significantly more ammonium, potassium and organic carbon

Soil variable (May 2006)	Bridal creeper plots	Removal plots
Nitrate (mg kg <sup>-1</sup> )	5.60 ± 1.57 <sup>a</sup>	5.20 ± 0.20 <sup>a</sup>
Ammonium (mg kg <sup>-1</sup> )	5.80 ± 1.46 <sup>b</sup>	2.40 ± 0.24 <sup>a</sup>
Phosphorus (mg kg <sup>-1</sup> )	6.00 ± 1.22 <sup>a</sup>	3.80 ± 0.20 <sup>a</sup>
Potassium (mg kg <sup>-1</sup> )	165.6 ± 28.9 <sup>b</sup>	83.8 ± 7.0 <sup>a</sup>
Organic carbon (%)	4.29 ± 0.43 <sup>b</sup>	1.87 ± 0.18 <sup>a</sup>
pH	6.86 ± 0.24 <sup>b</sup>	7.62 ± 0.21 <sup>a</sup>

- However, there was no significant difference in the native plant assemblages between treatments (ANOSIM R = 0.017; p = 0.274)



## DISCUSSION

- Density of this invasive weed did not influence the post-fire response of vegetation within this mallee ecosystem, with acacias and other native trees and shrubs now dominating the site
- Bridal creeper, a geophyte, may be able to capture and retain nutrients following fire by trapping nutrients with its tuberous root mat and recycling them through its annual senescence
- Fire however, could still be used as a restoration tool to stimulate the regeneration of native Australian plants to speed up the recovery of bridal creeper invaded ecosystems, provided bridal creeper and other weeds are at a low post-fire density (naturally or through targeted control methods)

[www.weeds.crc.org.au](http://www.weeds.crc.org.au)



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