Protection of Threatened Flora by Phosphite application in Southern Western Australia

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Phytophthora cinnamomi is a primary threatening process for threatened flora in southern Western Australia. This is particularly so in the Stirling Range (SRNP) and the Albany coastal area where disease impact is high due to susceptible plant communities and conducive topography, soils and climate. Several highly susceptible Threatened Flora species in the SRNP and Albany area have already undergone population extinctions and are at very high risk of species extinction (Barrett *et al*. 2008). New infestations continue to manifest themselves in formerly healthy populations through either animal or human vectoring, particularly after disturbance by fire. Since 1997, the fungicide phosphite has been used as a low volume aerial application to enhance the survival of threatened flora that persist in dieback infested areas or to slow the spread of the disease into healthy populations. The program has expanded gradually from 1997 and currently some 26 threatened flora are sprayed comprising an area of approximately 350 ha. Experimental sites have been set up to assess the efficacy of the programs. Results generally indicate that survival of threatened flora is increased with phosphate applications with Critically Endangered species such as *Banksia anatona Daviesia glosso*s*ema*, and *Daviesia pseudaphylla* showing significantly reduced mortality. However, in other species such as *Banksia montana* control seems to be having little effect and *ex situ* conservation efforts have needing to be fast tracked. Despite the lack of control in *B. montana* monitoring of survival rates has shown phosphite to be an effective short to medium term tool in slowing decline in many threatened species. The phosphate application program has effectively 'bought time' to allow seed and other germplasm to be collected from highly threatened populations and translocations or 'seed orchards' to be implemented at disease-free sites. *Aus J Bot*, **56**:1-10.

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