

FIRE UPDATE

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THE DECLINE OF THE EUCALYPT

NEW RESEARCH IS FINDING OUT WHY EUCALYPT FORESTS ACROSS AUSTRALIA ARE DECLINING IN HEALTH

Around three million hectares of Australia's temperate eucalypt forests and woodlands across five states (Western Australia, South Australia, Victoria, New South Wales and Tasmania) are displaying a decline in health and vigour.

Bushfire CRC researchers at the University of Tasmania are investigating fire and eucalypt health in close collaboration with a range of partners.

Forest types as diverse as the Tuart woodlands of Western Australia, the coastal forests of New South Wales and high altitude Eucalyptus delegatensis forests of Tasmania are affected. In many cases this decline in forest health is first seen in the older, dominant trees and is mostly associated with forests on poorer soils that have not been exposed to natural wildfire for long periods.

Eucalypts are dependent on fire for regeneration and this project aims to identify whether fire (at particular intervals) is also required to maintain forest health.

The Bushfire CRC project began in early 2006 and was initiated by and jointly funded by the land managers and the Bushfire CRC.

Research sites of adjacent stands in the same forest with contrasting fire history (long unburnt and frequently burnt) have been established in Western Australia (E. gomphocephala woodland), New South Wales (Eden Burn Study) and Tasmania (NE and NW E. delegatensis forest, E. amygdalina forest). Prescribed burning treatments are now underway in Western Australia and Tasmania.

Tree health, understorey vegetation and litter survey, soil microbiology and ecosystem and plant nutrition are being studied to test the hypothesis that the development of understorey, in the absence of fire, alters ecosystem and eucalypt overstorey nutrition.

PROGRESS

Experimental burns

Trial sites established, pre-burn data gathered, burns in April and May 2007.

Communications

With end-users, scientific community and the public at seminar presentations including: 'Vegetation Futures' Greening Australia conference, Melbourne, March 2006; School of Plant Science, University of Tasmania, September 2006; Australian Forest Growers conference, Launceston, Tasmania, October 2006; Keynote presentation at the Woodland Decline Symposium, Perth, October 2006.

Manuscripts

Publication in *Sustainable Forestry - Everybody Benefits*, conference papers of the Australian Forest Growers International Conference - Launceston, October 2006. Submitted for publication in *Biological Conservation* and *Austral Ecology*.

EXPECTED OUTCOMES

This project will guide the development of policies on the frequency of fire required to maintain overstorey eucalypt health in a given forest type.

The outcome of the project will be a guide that can be used by forest managers to determine when a forest should be burnt to maintain forest health. The guide will be targeted at susceptible forest types.



ABOUT THE PROJECT

Eucalypt decline in the absence of fire, Bushfire CRC Project B7, is lead by Neil Davidson (project leader) and Dugald Close (project manager) of the University of Tasmania working with the Forest Fire Management Group, the Department of Environment and Conservation (WA), the Tuart Health Research Group (Murdoch University), Forests NSW, Forestry Tasmania, the Department of Arts, Environment and Heritage (Tasmania), and the Tasmanian Fire Service.

◀ LEFT: Tuart State Forest frequently burnt area (far left) with an open understorey and a healthy eucalypt overstorey. This compares with an infrequently burnt forest close by with a developed understorey and a dead eucalypt overstorey.