

FIRE UPDATE

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FIRE IN THE WET EUCALYPTS

THE WILDFIRE CHRONOSEQUENCE PROJECT IS STUDYING THE WET EUCALYPT FORESTS OF TASMANIA

Fire is a natural or anthropogenic disturbance that plays a fundamental role in the establishment and survival of wet eucalypt forests in Tasmania. Whether the source of this fire has been humans or lightning, fire has occurred in the landscape for millennia over a range of spatial and temporal scales.

The research is based in the wet eucalypt forests of southern Tasmania where wildfire frequency ranges from one in 20 years to one in 100-400 years.

Current management practices in wet eucalypt forests managed for timber production do not entirely replicate the historic fire patterns and frequencies. Consequently, current practices may disrupt the natural ecological processes that determine the structure and function of wet eucalypt forests and so may even lead to a reduction in biodiversity.

PROJECT AIMS

The Wildfire Chronosequence Project is a joint project established by Forestry Tasmania, the Bushfire CRC and the School of Plant Science, University of Tasmania.

It is part of Bushfire CRC Project B3.1 Impacts of fire on ecological processes and biodiversity, led by Dr Alan York, University of Melbourne. A chronosequence study is a means of studying long-term changes over a shorter time period.

The project has established a set of permanent, baseline sites along a wildfire chronosequence to better understand biodiversity, physical responses and ecosystem processes following wildfire. The study sites span wildfire years (1898, 1934, 1966/1967), in old growth mixed forest and forest subject to silvicultural management ("clearfell, burn and sow" sites from 1966 and 2000 onwards).

The establishment of permanent research sites in the landscape will assist research into a range of aspects of biodiversity and of ecological processes in wet eucalypt forests.

The project is considering the principal questions:

- How does a single catastrophic wildfire affect structural diversity, physical processes (for example, biomass accumulation and nutrient cycling) and plant succession in wet eucalypt forest over a time-scale measured in decades or centuries?
- How do these effects and processes differ from those brought about by clearfell, burn and sow silviculture?

The research aims to develop better methods for managing structural complexity and fire-dependent biodiversity in the landscape. These will inform both forestry and conservation.

OUTPUTS

A report on the establishment of the Wildfire Chronosequence Project has been compiled by Perpetua Turner from the School of Plant Science at the University of Tasmania with the assistance of Simon Grove and Craig Airey, Division of Forest Research and Development, Forestry Tasmania.

The Wildfire Chronosequence Project Establishment Report provides a detailed description of the permanent baseline sites along the wildfire chronosequence and the methods used to measure forest structure. A report characterising the patterns of vertical structure along the wildfire chronosequence is planned.

OUTCOMES OF THE PROJECT

Australia uses a wide range of materials which originate in wet eucalypt forests, ranging from paper through structural timber products to high grade veneer timber. Sustainable forest management is critical in ensuring the long term availability of these materials.

Fundamental research of the kind being conducted in the Wildfire Chronosequence Project is essential to the improvement of knowledge of ecological processes occurring within wet eucalypt forests.

The knowledge gained will assist continuous improvement of forest management practices and help the forest industry to balance commercial and ecological objectives. Ultimately, the goal is to deliver sustainable forest management for this and future generations of Australians.

Tony Blanks, Manager, Fire Management, Forestry Tasmania.

See the report at www.bushfirecrc.com

