

# Bushfire CRC Update

## → Grassland curing under scrutiny

*Research will provide better information for fire managers on fuels and fire danger ratings.*

Grassfires are a significant fire issue in Australia and New Zealand. This project is developing better methods to assess the current and predicted levels of curing in grasslands as an input into fire danger rating systems and fire behaviour models.

The degree of curing represents the proportion of dead material in a grassland fuel complex - in simple terms, it is the percentage of grass fuel that is dead. The curing process is the die-off of grasses during the dry season.

It is important to better understand grassland curing because the process is required as an input for fire behaviour (rate of spread and intensity) calculations and predictions, as well as in determining the fire danger levels in grasslands.

### AN ISSUE NEEDING RESEARCH

Currently, the degree of curing is often poorly assessed. This is resulting in inaccurate inputs to fire behaviour models and fire danger rating systems, and therefore inaccurate predictions of fire behaviour and inaccurate determinations of grassland fire danger levels.

This means that fire management in grassland areas could be based on inaccurate information and fire managers do not have the most accurate information on hand to aid in decision-making.

The degree of curing affects all aspects of grassland fire management, from preparedness and resource allocation through to fire suppression, community and firefighter safety and the use of fire as a land management tool.

Curing is currently assessed either visually in the field or determined through remote sensing (satellite imagery).



Researchers are collecting field data in Australia and New Zealand by counting the number of live and dead grasses that come into contact with a thin steel rod measuring device, called a Levy Rod, seen at left.

Visual assessments are often inaccurate - often significantly so - and in remote areas it is difficult and costly to obtain regular observations. There are problems with the current remote sensing curing product. These include the data being affected by vegetation cover that is non-uniform (non-grass fuels or bare ground, roads or waterways, for example), cloudiness, smoke or haze and other types of interference.

### OUTCOMES

In order to deliver improvements to both remote sensing and grassland modelling techniques the researchers have developed a method to better determine curing levels using a thin steel rod called a Levy Rod. This involves tallying live and dead touches on the rod placed vertically at set intervals along the ground. This method is less subjective, is quick and easy to do, and gathers more precise data for the researchers to use to improve the current techniques.

Trials in the ACT, New South Wales and New Zealand met with reasonable success. Sampling has been extended to Western Australia and Queensland.

The method is promising and the accuracy will be improved across all types of grassland areas with more data collection.



Same view, a different stage of the curing process. The grasslands around Lake Lyndon in New Zealand.

Bushfire CRC project A 1.4, Improved Methods for Assessment and Prediction of Grassland Curing, is led by Stuart Anderson from Ensis, Forest Biosecurity and Protection, in New Zealand. He is being assisted by colleagues at the University of New South Wales (Australian Defence Force Academy) in Canberra, Ensis in Canberra, the Bureau of Meteorology and the Department of Environment and Conservation in Western Australia as well as fire and land management agencies in Australia and New Zealand.