

## **Abstract for IAWF conference on Fuels and Fire Behaviour, Sydney, May 2019**

### **Evaluating fuel and soil moisture indices as a guide to fuel availability in tall open forests**

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Tall open eucalypt forests in southern Australia may develop a dense stratum of mid-storey trees and understorey shrubs and a deep layer of surface fuel on the forest floor. Understanding the moisture dynamics of deep surface fuel layers is important for predicting the likelihood of fire ignition and spread, and how much of the surface fuel is available for combustion during flaming or smouldering phases of combustion. In Western Australia, fire managers have utilised the Mount Soil Dryness Index and fuel moisture content predictions from the WA Forest Fire Behaviour Tables as a guide to fire ignition, fuel consumption and potential difficulty of containment of fires in tall open forests dominated by karri (*Eucalyptus diversicolor*). While these indicators have proved effective over many decades, a range of new guidance products have become available and offer advantages in having a stronger underlying basis in physical modelling, or reliance on direct observations obtained at moderate to high spatial resolution from remotely sensed imagery. Several of these products have recently been made available through the web-enabled Australian Flammability Monitoring System. Interpreting and evaluating the outputs from this new generation of products is an important task for bushfire scientists and managers and there is a need to translate existing operational guidance into formats compatible with new products. This presentation will outline how existing moisture indices are applied and examine what actions are required for successful adoption of new products. Case studies of prescribed burns and bushfires in tall open forest will be used to compare and contrast guidance provided by existing and new products. The National Fire Danger Rating System project will provide a useful framework for evaluation and operational implementation of the next generation of fuel moisture products applicable to tall open forests.