

International Journal of Wildland Fire

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Contents	Volume 16	Issue 4	2007
<p>Bushfires 'down under': patterns and implications of contemporary Australian landscape burning Jeremy Russell-Smith, Cameron P. Yates, Peter J. Whitehead, Richard Smith, Ron Craig, Grant E. Allan, Richard Thackway, Ian Frakes, Shane Cridland, Mick C. P. Meyer and A. Malcolm Gill <i>International Journal of Wildland Fire</i> 16, 361–377</p>			<p>On the basis of continental-scale fire mapping data derived from AVHRR imagery, 1997–2005, the paper provides the first national-scale, rigorously quantitative assessment of the spatial extent of fire in the entire Australian landscape.</p>
<p>Traditional and ecological fires and effects of bushfire laws in north Australian savannas Noel Preece <i>International Journal of Wildland Fire</i> 16, 378–389</p>			<p>Legislation which regulates the lighting of fires in north Australian tropical savanna landscapes is becoming an impediment to sound ecological and traditional indigenous burning, emulating failed temperate region legislation. This paper explores some of the problems with the legislation, proposes some solutions, and advocates active prescribed burning programs.</p>
<p>Estimation of dead fuel moisture content from meteorological data in Mediterranean areas. Applications in fire danger assessment I. Aguado, E. Chuvieco, R. Borén and H. Nieto <i>International Journal of Wildland Fire</i> 16, 390–397</p>			<p>Water content in dead fuels is a key factor to determine the degree of fire danger. Two meteorological danger indices were compared and tested to estimate dead fuel water content in Mediterranean areas. Estimated values were scaled in terms of probability of ignition, using the moisture of extinction for each type of fuel.</p>
<p>Human and biophysical factors influencing modern fire disturbance in northern Wisconsin Brian R. Sturtevant and David T. Cleland <i>International Journal of Wildland Fire</i> 16, 398–413</p>			<p>We analysed a fire database from northern Wisconsin to evaluate how human and biophysical variables influence fire risk. Our results indicate wildfire occurrence patterns are primarily associated with rural development whereas biophysical factors (e.g. soil texture, glacial landform, land cover) largely determine whether those fire starts become large fires.</p>
<p>Experimental fire behaviour in managed <i>Pinus sylvestris</i> and <i>Picea abies</i> stands of Finland Heidi Tanskanen, Anders Granström, Markku Larjavaara and Pasi Puttonen <i>International Journal of Wildland Fire</i> 16, 414–425</p>			<p>Combined product of weather and stand structure in fire behaviour was studied in boreal stands dominated by <i>Pinus sylvestris</i> and <i>Picea abies</i>. Increasing mid-flame wind speed increased spread rate exponentially. Existing fire weather models proved fairly capable of estimating general fire proneness in <i>Pinus</i> stands. In <i>Picea</i> stands, the transition of fire weather from low to moderate risk had no notable increase in burning readiness.</p>
<p>Combustion characteristics of north-eastern USA vegetation tested in the cone calorimeter: invasive versus non-invasive plants Alison C. Dibble, Robert H. White and Patricia K. Lebow <i>International Journal of Wildland Fire</i> 16, 426–443</p>			<p>Invasive plants alter fuel beds in the north-eastern USA. We compared heat content in 42 species of invasive and non-invasive plant species using the cone calorimeter. Overall the invasive plants had lower average effective heat of combustion, and heat content was high in roundleaf greenbrier, scotch broom, and black huckleberry.</p>
<p>Development of an index for quick comparison of helicopter costs and benefits Diane Trethewey <i>International Journal of Wildland Fire</i> 16, 444–449</p>			<p>An index is developed for the efficient deployment of helicopters to large fires. The index summarises cost and benefit information for individual helicopters so they can be quickly compared. A theoretical model comparing the index to a deployment method that does not include benefit information shows potential for significant savings.</p>

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- Post-fire recolonisation of a montado area by the endangered Cabrera vole (*Microtus cabreræ*)
Inês T. do Rosário and Maria da Luz Mathias
International Journal of Wildland Fire **16**, 450–457
- Data on a post-fire recolonisation by the endangered Cabrera vole are given for the first time. Distance from unburned areas and vegetation structure and composition were the most relevant ecological features in reestablishment of the colonies. The importance of the Portuguese montado for this species was reinforced.
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- Firebrand generation from burning vegetation
Samuel L. Manzello, Alexander Maranghides and William E. Mell
International Journal of Wildland Fire **16**, 458–462
- The goal of this study is to investigate firebrand production from burning vegetation. A series of experiments were conducted to collect firebrands produced from burning Douglas-fir trees of varying height and moisture content. The size and mass distribution of the firebrands produced was determined.
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- Stand-specific litter moisture content calibrations for the Canadian Fine Fuel Moisture Code
B. Mike Wotton and Jennifer L. Beverly
International Journal of Wildland Fire **16**, 463–472
- Models linking actual surface litter moisture content to the Canadian Forest Fire Danger Rating System's Fine Fuel Moisture Code are developed for a number of stand types across Canada and several stand densities. A method for adjusting the Fine Fuel Moisture Code for duff moisture level is also developed.
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- A critical assessment of the Burning Index in Los Angeles County, California
Frederic P. Schoenberg, Chien-Hsun Chang, Jon E. Keeley, Jamie Pompa, James Woods and Haiyong Xu
International Journal of Wildland Fire **16**, 473–483
- The historical relationship between Burning Index and wildfire activity in Los Angeles County, California, is examined. A simple point process model using some variables incorporated by the Burning Index is shown to outperform the Burning Index in terms of predictive power.
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- Spatial and temporal patterns of plant functional types under simulated fire regimes
Juli G. Pausas and F. Lloret
International Journal of Wildland Fire **16**, 484–492
- We use a landscape simulation model to study the effect of different fire regime scenarios on vegetation composition, richness and spatial pattern in the Mediterranean basin. The different fire scenarios simulate fire suppression (few large fires), unmanaged conditions (many small fires) and prescribed fuel reduction.
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- Separating combustion from pyrolysis in HIGRAD/FIRETEC
Jonah J. Colman and Rodman R. Linn
International Journal of Wildland Fire **16**, 493–502
- A simple extension to the burning model currently employed in the fire behaviour model HIGRAD/FIRETEC is presented. In the new model a transportable combustible gas is introduced. The new model was found to give comparable results to the old in a few simple test simulations utilising idealised geometries.
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- Sensitivity of a surface fire spread model and associated fire behaviour fuel models to changes in live fuel moisture
W. Matt Jolly
International Journal of Wildland Fire **16**, 503–509
- Surface fire spread model sensitivity to changes in live fuel moisture (LFM) is evaluated for 53 standard fuel models. Model response to LFM is dependent on the choice of fuel model and the range of moisture values chosen. These results are expressed in relation to predicted fire fighter safety zone size.
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