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| Contents | Volume 16 | Issue 1 | 2007 |
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| Editorial Mike Flannigan <i>International Journal of Wildland Fire</i> 16 , iii. | | | |
| A physics-based approach to modelling grassland fires William Mell, Mary Ann Jenkins, Jim Gould and Phil Cheney <i>International Journal of Wildland Fire</i> 16 , 1–22. | | | Results from a physics-based model for grassland fires are compared to experimental observations of head fire spread rates (for different wind speeds and ignition line widths). Predictions of the time evolution of the entire fireline, for two experimental cases, are also compared. Overall, model predictions compare favourably to observations. |
| Factors influencing wildfire occurrence and distribution in eastern Kentucky, USA John K. Maingi and Mary C. Henry <i>International Journal of Wildland Fire</i> 16 , 23–33. | | | Eighteen satellite images acquired between 1985 and 2002 were used to map individual fire scars and to create a cumulative fire occurrence map for that time period. The resulting map was related to topographic characteristics, moisture conditions, and human activities. |
| Long-term forest landscape responses to fire exclusion in the Great Xing'an Mountains, China Yu Chang, Hong S. He, Ian Bishop, Yuanman Hu, Rencang Bu, Chonggang Xu and Xiuzhen Li <i>International Journal of Wildland Fire</i> 16 , 34–44. | | | Nearly half a century of fire exclusion in North-eastern China has had some negative consequences, such as leading to catastrophic fires, simplifying tree species composition, and altering forest age structures and landscape patterns. Prescribed burning or coarse woody debris reduction, and uneven age management should be incorporated into forest management plans in this region. |
| Burnt area estimation for the year 2005 in Borneo using multi-resolution satellite imagery Jukka Miettinen, Andreas Langner and Florian Siegert <i>International Journal of Wildland Fire</i> 16 , 45–53. | | | This paper compares, evaluates and combines active fire (i.e. hotspot) detection and burnt area mapping to estimate the total burnt area and its distribution into land cover types in Borneo in 2005. The paper highlights the difficulty of large-scale burnt area estimation in this region. |
| First year survival of <i>Pinus hartwegii</i> following prescribed burns at different intensities and different seasons in central Mexico Dante Arturo Rodríguez-Trejo, Uriel Baruch Castro-Solis, Marcelo Zepeda-Bautista and Richard John Carr <i>International Journal of Wildland Fire</i> 16 , 54–62. | | | The scientific use of fire is being used to reduce the problem of altered fire regimes worldwide, particularly in developing countries, where information on fire effects and fire ecology is scarce. Such use should maximise positive impacts of fire, such as tree survival and vigour, and reduce the negative impacts. This study shows that the March low intensity prescribed burn on open stands yielded minimal mortality. In contrast, the May high intensity prescribed burn on closed stands represented the highest mortality for young <i>Pinus hartwegii</i> trees, particularly for those with low diameter at breast height. Moreover, the higher the crown kill, the higher the probability of infestation by bark beetles. |
| Effect of high temperatures on seed germination and seedling survival in three pine species (<i>Pinus pinaster</i> , <i>P. sylvestris</i> and <i>P. nigra</i>) R. Alvarez, L. Valbuena and L. Calvo <i>International Journal of Wildland Fire</i> 16 , 63–70. | | | This study compares the effects of fire on germination, survival and seedling growth of <i>Pinus pinaster</i> , <i>P. sylvestris</i> and <i>P. nigra</i> . The results showed that <i>P. pinaster</i> seeds and seedlings survive higher temperatures than the other two. These properties could represent an efficient regeneration strategy after recurrent perturbations due to forest fires. |

Predicting forest floor moisture for burned and unburned *Pinus banksiana* forests in the Canadian Northwest Territories
Keith N. Abbott, Martin E. Alexander, David A. MacLean, Brigitte Leblon, Judith A. Beck and Gordon C. Staples
International Journal of Wildland Fire **16**, 71–80.

Relationships between fuel moisture codes of the Canadian Forest Fire Weather Index System and organic layer moisture content in mature, unburned jack pine stands and 2–5-year-old burns were examined by destructive sampling. The Duff Moisture Code turned out to be the best single predictor, explaining more than 80% of the variation in the data.

Shrubland fire regime scenarios in the Swartberg Mountain Range, South Africa: implications for fire management
A. H. W. Seydack, S. J. Bekker and A. H. Marshall
International Journal of Wildland Fire **16**, 81–95.

Factors controlling fire regimes in mediterranean-type shrublands of the Swartberg Mountain Range, South Africa, were studied. Two basic fire regime scenarios were identified. Fire regime patterns in xeric shrublands at lower altitudes were largely controlled by the rate of fuel accumulation, whereas climatically controlled ignition frequencies and fire climate constituted the dominant controls in proteoid shrublands at mid to high altitudes. The implications of associated fire regime patterns for fire management are explored, with specific reference to natural fire zone management practiced since 1980.

Impact of prescribed fire and other factors on cheatgrass persistence in a Sierra Nevada ponderosa pine forest
Jon E. Keeley and Thomas W. McGinnis
International Journal of Wildland Fire **16**, 96–106.

Bromus tectorum has invaded low elevation ponderosa pine forests following prescription burning. Early season burning in these low fuel volume forests does not hold promise for control but increased length of fire intervals may allow sufficient fuel accumulation to inhibit such invasions. Management of affected landscapes may require a compromise between reducing fire hazards and exacerbating alien invasions.

Factors affecting sustained smouldering in organic soils from pocosin and pond pine woodland wetlands
James Reardon, Roger Hungerford and Kevin Ryan
International Journal of Wildland Fire **16**, 107–118.

Smouldering combustion limits of root mat and muck organic soils from North Carolina coastal plain wetlands were studied under laboratory and prescribed burning conditions. These soils have different properties that affect smouldering combustion limits. The laboratory results showed that moisture and mineral content were important factors influencing the probability of sustained combustion in root mat soils whereas moisture content was important in muck soils. Predictions based on laboratory work were consistent with the results of prescribed burning.

Fluctuations in fuel moisture across restoration treatments in semi-arid ponderosa pine forests of northern Arizona, USA
Shawn Michael Faiella and John Duff Bailey
International Journal of Wildland Fire **16**, 119–127.

Temporal changes and treatment effects on live and dead fuel moisture content were quantified in semi-arid ponderosa pine forests of northern Arizona, USA. No clear relationship was found regarding a treatment's effect on the moisture content of old or new live foliage, and no conclusive evidence was found for a significant treatment effect on moisture content of fuel particles in the size classes of 0–6, 6–25, and 25–100 mm diameter.

Pre-wildfire fuel treatments affect long-term ponderosa pine forest dynamics
Barbara A. Strom and Peter Z. Fulé
International Journal of Wildland Fire **16**, 128–138.

Stands treated to reduce fuels had minimal mortality and fewer sprouting oaks and shrubs than paired untreated stands following the largest severe wildfire to date in the south-western USA. Simulation modelling showed that untreated stands failed to recover pine dominance even after 100 years, illustrating the long legacy of management decisions.
