

International Journal of Wildland Fire

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Contents	Volume 15	Issue 4	2006
Generalization of the fire line rotation model to curved fire lines Imma Oliveras, Josep Piñol and Domingos X. Viegas <i>International Journal of Wildland Fire</i> 15 , 447–456.			The fire line rotation model, which was developed in the laboratory for straight fire lines, states that a fire front does not spread linearly along a homogeneous fuel bed, it rotates due to convective effects. This study tests the applicability of this model to curved fire lines under laboratory conditions and demonstrates the existence of the rotation movement.
Fire type mapping using object-based classification of Ikonos imagery George H. Mitri and Ioannis Z. Gitas <i>International Journal of Wildland Fire</i> 15 , 457–462.			This work aimed to accurately map the type of fire by employing object-based classification of very high spatial resolution imagery. The method resulted in successful discrimination between areas of surface and canopy burn. The results of this work have significant applications in the study of fire behaviour, fire suppression, and fire effects.
Fuel loads, fire regimes, and post-fire fuel dynamics in Florida Keys pine forests Jay P. Sah, Michael S. Ross, James R. Snyder, Suzanne Koptur and Hillary C. Cooley <i>International Journal of Wildland Fire</i> 15 , 463–478.			In Florida Keys pine forests, fire behavior varies depending on the contributions of different life forms to the total fuel loads, and burn season. Winter fires are generally milder than summer fires, but are less effective at inhibiting shrub encroachment, suggesting that a mixed seasonal approach should be used for fire management.
Forest floor fuel dynamics in mixed-oak forests of south-eastern Ohio John B. Graham and Brian C. McCarthy <i>International Journal of Wildland Fire</i> 15 , 479–488.			Fuel dynamics change over time depending on the fuel class and treatment. In eastern mixed-oak forests, fuel dynamics are less important to future fire regime than forest production and decomposition.
Accurate estimation of mean fire interval for managing fire Xiaojun Kou and William L. Baker <i>International Journal of Wildland Fire</i> 15 , 489–495.			A new method of estimating mean fire interval from fire scars on trees is developed. The method is shown to greatly improve accuracy and provide unbiased estimates.
Response of boreal plant communities to variations in previous fire-free interval Jill F. Johnstone <i>International Journal of Wildland Fire</i> 15 , 497–508.			This study reports on post-fire plant community composition in boreal forests where overlapping burn scars have resulted in contrasting fire-free intervals. The strongest effects of increased fire occurrence were increases in the abundance of woody deciduous shrubs and decreases in residual woody debris.
Soil heating and germination: investigations using leaf scorch on graminoids and experimental seed burial Mark G. Tozer and Tony D. Auld <i>International Journal of Wildland Fire</i> 15 , 509–516.			The length of scorch on leaves of resprouting graminoids indicates the degree of soil heating during a fire. We investigated the relationship between scorch length and heat-triggered seed germination. By following the fate of seeds during a fire in an experimental setting we show that emergence depends on both heat penetration and other depth-related factors such as moisture and temperature stresses.
Measurements of moisture in smoldering smoke and implications for fog Gary L. Achtemeier <i>International Journal of Wildland Fire</i> 15 , 517–525.			Measurements in 27 smoldering smokes showed large variability of moisture. Theoretical calculations show that moisture from smoldering smokes is sufficient, under nocturnal conditions of light winds and entrapment, to raise relative humidity to 100%, to increase existing fog, and to initiate fog where fog might otherwise not have occurred.

Simulation of prescribed burning strategies in south-west Tasmania, Australia: effects on unplanned fires, fire regimes, and ecological management values

Karen J. King, Geoffrey J. Cary, Ross A. Bradstock, Joanne Chapman, Adrian Pyrke and Jonathon B. Marsden-Smedley
International Journal of Wildland Fire **15**, 527–540.

A computer simulation model, FIRESCAPE-SWTAS, was used to determine the trade-offs between the extent of prescribed burning and the long-term impacts of unplanned fires on management values in the World Heritage Area of south-west Tasmania, Australia. Fire size distributions, fire incidences, mean annual areas burnt, mean inter-fire intervals, and risks to defined values in the landscape were assessed.

Seasonality and fire severity in savanna landscapes of monsoonal northern Australia

Jeremy Russell-Smith and Andrew C. Edwards
International Journal of Wildland Fire **15**, 541–550.

Seasonal fire severity in two northern Australian national parks was assessed from 10 years of photo records for 178 monitoring plots. Data for 719 fires indicate that the great majority of early dry season (pre-August) fires were of very low severity, whereas fires later in the dry season were typically of substantially greater severity.

Fire regimes and soil erosion in north Australian hilly savannas

Jeremy Russell-Smith, Cameron Yates and Brian Lynch
International Journal of Wildland Fire **15**, 551–556.

Soil erosion is a major landscape management issue in monsoonal northern Australia. However, the impacts of savanna burning on soil erosion are not recognised in current Australian national assessments. A simple erosion pin assessment undertaken at two hillslope sites illustrates that whereas significant erosion was observed on both unburnt and burnt treatments, overall there was roughly three times net soil loss, and two times more soil movement, on late dry season burnt plots.

Influence of topography and forest structure on patterns of mixed severity fire in ponderosa pine forests of the South Dakota Black Hills, USA

Leigh B. Lentile, Frederick W. Smith and Wayne D. Shepperd
International Journal of Wildland Fire **15**, 557–566.

Patterns of burn severity (i.e. fire effects on soil and vegetation) were correlated with topographical position and pre-fire vegetation structure. Managers should consider topography and stand structure together when making strategic decisions about which stands to thin or otherwise manage to reduce the severity of future wildfires.

Investigation of the wind speed threshold above which discarded cigarettes are likely to be moved by the wind

Gavriil Xanthopoulos, Dany Ghosn and George Kazakis
International Journal of Wildland Fire **15**, 567–576.

Cigarette butts thrown from passing cars are potential ignition sources if they end up on dead and dry fuels. The paper presents an experimental investigation of the wind speed thresholds above which discarded butts are unlikely to stay on the road surface but will roll with the wind to the fuels on the roadside.
