

# International Journal of Wildland Fire

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Contents	Volume 19	Issue 4	2010
Assessing crown fire potential in coniferous forests of western North America: a critique of current approaches and recent simulation studies <b>Miguel G. Cruz and Martin E. Alexander</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 377–398			Certain fire modelling systems incorporating Rothermel's surface and crown fire rate of spread models coupled with Van Wagner's crown fire initiation and propagation models are shown to exhibit a significant underprediction bias when used to simulate the onset of crowning and spread rate of active crown fires in conifer forest stands of the western US and Canada.
NCEP–ECPC monthly to seasonal US fire danger forecasts <b>J. Roads, P. Tripp, H. Juang, J. Wang, F. Fujioka and S. Chen</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 399–414			A state-of-the-art numerical climate forecasting system developed at the National Centers for Climate Prediction can be used to predict seasonal fire danger over the contiguous United States 7 months in advance with considerable accuracy.
Effect of fire weather, fuel age and topography on patterns of remnant vegetation following a large fire event in southern California, USA <b>Nell Blodgett, Douglas A. Stow, Janet Franklin and Allen S. Hope</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 415–426			Utilising high-resolution airborne imagery, post-fire unburned vegetation was mapped and compared between the Santa Ana section and the non-Santa Ana section of the 2003 Cedar Fire. Results point to notable differences in the proportion and pattern of unburned vegetation between the two sections in relation to vegetation, topography, and age-class.
Mesoscale model simulation of the meteorological conditions during the 2 June 2002 Double Trouble State Park wildfire <b>Joseph J. Charney and Daniel Keyser</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 427–448			During a wildfire in east-central New Jersey on 2 June 2002, surface drying and increasing wind speed coincided with erratic fire behaviour and rapid fire growth. A high-resolution meso-scale model simulation was employed to address the hypothesis that these conditions resulted from the downward transport of dry, high-momentum air occurring in conjunction with a deepening mixed layer during the late morning and early afternoon of 2 June.
Beyond Landsat: a comparison of four satellite sensors for detecting burn severity in ponderosa pine forests of the Gila Wilderness, NM, USA <b>Zachary A. Holden, Penelope Morgan, Alistair M. S. Smith and Lee Vierling</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 449–458			This paper investigates the severity of the 2003 Dry Lakes fire when different satellite sensors of varying spatial resolution are used. Results show the moderate spatial resolution sensors show great potential for mapping burn severity.
Simple models for predicting dead fuel moisture in eucalyptus forests <b>Stuart Matthews, Jim Gould and Lachie McCaw</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 459–467			Fire behaviour prediction requires models of fuel moisture that are both accurate and suitable for use for operational applications. This paper describes an attempt to simplify a complex research model to produce tools that are both accurate and can be used where limited or no computing facilities are available.
Economic analysis of geospatial technologies for wildfire suppression <b>Hayley Hessel, Gregory S. Amacher and Aaron Deskins</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 468–477			We examine total fire expenditures, agency fire suppression costs, fire duration and area burned for large fires in the Northern Rocky Mountains to assess geospatial technologies, finding that, although geospatial technology use does not significantly increase suppression costs, it does allow more efficient allocation of fire fighting control resources.
Bare soil and rill formation following wildfires, fuel reduction treatments, and pine plantations in the southern Sierra Nevada, California, USA <b>Neil H. Berg and David L. Azuma</b> <i>International Journal of Wildland Fire</i> <b>19</b> , 478–489			Measurements of percentage bare soil and rilling on over 600 plots suggest that after wildfire, rilling was seldom evident after more than 4 years. Percentage bare soil generally did not differ significantly between reference plots and wildfire plots greater than 6 years old. Little rilling was evident after treatment with a variety of fuel reduction techniques.

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Impacts of erosion control treatments on native vegetation recovery after severe wildfire in the Eastern Cascades, USA

**Erich K. Dodson, David W. Peterson and Richy J. Harrod**  
*International Journal of Wildland Fire* **19**, 490–499

We evaluated post-fire seeding and fertilisation treatment effects on native and exotic vegetation cover and richness to examine possible tradeoffs between meeting erosion control objectives and native vegetation recovery. Seeding reduced native species richness and cover and introduced exotic species. Fertilisation increased native plant cover, but not species richness.

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Effect of fire severity on long-term occupancy of burned boreal conifer forests by saproxylic insects and wood-foraging birds

**Antoine Nappi, Pierre Drapeau, Michel Saint-Germain and Virginie A. Angers**

*International Journal of Wildland Fire* **19**, 500–511

We investigated the effects of fire severity on the long-term occupancy (6 to 11 years post-fire) of burns by deadwood-associated birds and insects. Our results indicate that less severely burned snags and stands within high-severity burns likely provided habitat conditions suitable for their long-term use by these species.

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The initiation of fire spread in shrubland fuels recreated in the laboratory

**Matt P. Plucinski, Wendy R. Anderson, Ross A. Bradstock and A. Malcolm Gill**

*International Journal of Wildland Fire* **19**, 512–520

Factors affecting the initiation of spread in shrub fuel layers were investigated in a laboratory using small-scale representations of shrub arrays. Fire sustainability was found to be affected by presence of litter, live fuel moisture content, shrub-layer density, presence of wind, and dead fuel amount and continuity.

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Monte Carlo-based ensemble method for prediction of grassland fire spread

**Miguel G. Cruz**

*International Journal of Wildland Fire* **19**, 521–530

This paper investigates the applicability of a simple Monte Carlo sampling method to predict grassland fires rate of spread and associated uncertainty. The method provides information describing the variability associated with the predictions and a probabilistic output for the occurrence of threshold levels of fire behaviour.



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