

# International Journal of Wildland Fire

Scientific Journal of the International Association of Wildland Fire

Contents	Volume 18	Issue 8	2009
<p>An approach to operational forest fire growth predictions for Canada  <b>K. R. Anderson, P. Englefield, J. M. Little and Gerhard Reuter</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 893–905</p>		<p>An operational approach is presented for predicting the growth of forest fires in Canada, and for providing such predictions in a timely and efficient manner. Fuels, elevation, forecast weather, and satellite-detected fire locations are entered into a fire-growth model; then predicted fire perimeters are mapped and presented on the web.</p>	
<p>The BlueSky smoke modeling framework  <b>Narasimhan K. Larkin, Susan M. O'Neill, Robert Solomon, Sean Raffuse, Tara Strand, Dana C. Sullivan, Candace Krull, Miriam Rorig, Janice L. Peterson and Sue A. Ferguson</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 906–920</p>		<p>Smoke from fire is a local, regional and often international issue that is growing in complexity as competition for airshed resources increases. The BlueSky smoke modeling framework is designed to help address this problem by enabling simulations of the smoke impacts from fires. Predictions from BlueSky-based systems are now available across the contiguous US.</p>	
<p>Modeling and mapping wildfire ignition risk in Portugal  <b>Filipe X. Catry, Francisco C. Rego, Fernando Bação and Francisco Moreira</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 921–931</p>		<p>The ability to predict fire ignition occurrence is important to improve prevention, detection and firefighting systems effectiveness. We developed a model and produced an ignition risk map for Portugal, which can be used to help decision-making for wildfire prevention and management.</p>	
<p>Prediction of the probability of large fires in the Sydney region of south-eastern Australia using fire weather  <b>R. A. Bradstock, J. S. Cohn, A. M. Gill, M. Bedward and C. Lucas</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 932–943</p>		<p>Large fires in forested vegetation of the Sydney region are most likely when drought and severe 'ambient' weather coincide. Their probability can be predicted with an additive version of the McArthur Forest Fire Danger Index. As a result, the incidence of large fires may increase significantly under global warming.</p>	
<p>Effects of targeted cattle grazing on fire behavior of cheatgrass-dominated rangeland in the northern Great Basin, USA  <b>Joel M. Diamond, Christopher A. Call and Nora Devoe</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 944–950</p>		<p>This paper evaluates the effectiveness of using targeted grazing to reduce the flame length and rate of spread of fires on cheatgrass (<i>Bromus tectorum</i>)-dominated rangelands in northern Nevada. Results indicate that targeted grazing may reduce the potential of catastrophic wildfires on cheatgrass-dominated landscapes.</p>	
<p>Spot fires: fuel bed flammability and capability of firebrands to ignite fuel beds  <b>Anne Ganteaume, Corinne Lampin-Maillet, Mercedes Guijarro, Carmen Hernando, Marielle Jappiot, Teresa Fonturbel, Pedro Pérez-Gorostiaga and José A. Vega</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 951–969</p>		<p>The capacity of several fuel beds to be ignited by firebrands and to sustain a fire was assessed through the study of their flammability. Then, the capability of different types of firebrands to ignite fuel beds was studied through laboratory tests, in order to know their behaviour when they are involved in spot fires.</p>	
<p>Road network density correlated with increased lightning fire incidence in the Canadian western boreal forest  <b>M. Cecilia Arienti, Steven G. Cumming, Meg A. Krawchuk and Stan Boutin</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 970–982</p>		<p>Using regression models, we quantified the influence of anthropogenic linear features on lightning fire ignition frequency in the boreal forest of Alberta, Canada. We found a positive association between the number of lightning fires igniting per unit area and road density, suggesting that ongoing industrial developments have the potential to change the regional fire regime.</p>	
<p>Spatial and temporal extremes of wildfire sizes in Portugal (1984–2004)  <b>P. de Zea Bermudez, J. Mendes, J. M. C. Pereira, K. F. Turkman and M. J. P. Vasconcelos</b>  <i>International Journal of Wildland Fire</i> <b>18</b>, 983–991</p>		<p>Spatial and temporal patterns of large fire (&gt;100 ha) incidence in Portugal during 1984–2004 were modeled using extreme value statistics. The temporal analysis showed that there does not appear to be any trend in the incidence of very large fires, but revealed a cyclical behavior with a period in the range of three to five years, possibly due to the fire prone vegetation growth. Spatial analysis highlighted strong regional differences in the incidence of large fires.</p>	

Characterization of wildfire regimes in Canadian boreal terrestrial ecosystems

**Yueyang Jiang, Qianlai Zhuang, Mike D. Flannigan and John M. Little**

*International Journal of Wildland Fire* **18**, 992–1002

This study found that Canadian wildfires follow power-law frequency–area relationships between the number of fires and their burned area from 1980 to 1999. In addition, the wildfire recurrence intervals were found varied from place to place in Canada. Wildfire risk managers and carbon cycling scientists will benefit from these findings.

Seed provenance and fire-related reproductive traits of *Pinus pinaster* in central Spain

**Luis Gil, Rosana López, Álvaro García-Mateos and Inés González-Doncel**

*International Journal of Wildland Fire* **18**, 1003–1009

The importance of seed provenance in reforestation programs is shown by comparing natural stands with stands sown with seeds from provenances not adapted to crown-fires. Large divergences in crucial reproductive processes were found between both types of stands, implying a fire evader strategy of the local provenance.

Assessing the capabilities of geospatial data to map built structures and evaluate their bushfire threat

**Kim Lowell, Ron Shamir, Andreia Siqueira, John White, Alice O'Connor, Gary Butcher, Mark Garvey and Michael Niven**

*International Journal of Wildland Fire* **18**, 1010–1020

Human interpretation of digital aerial photographs was used to identify the locations of built structures in fire-prone areas of Victoria (Australia) for 1982 and 2006. Bushfire threat for each was estimated based on topography, vegetation, and wind direction. It was concluded that the percentage of high-threat structures had not changed.

Critical live fuel moisture in chaparral ecosystems: a threshold for fire activity and its relationship to antecedent precipitation

**Philip E. Dennison and Max A. Moritz**

*International Journal of Wildland Fire* **18**, 1021–1027

Based on a live fuel moisture time series and fire history from southern California, a live fuel moisture threshold for large fires was found to exist near 79%. Precipitation variables were used to explain variation in the timing of the threshold.



Wildfire awareness poster in South Africa.  
Photo: B. W. van Wilgen