

# *International Journal of Wildland Fire*

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Contents	Volume 13	Number 4	2004
<p>Fire weather index system components for large fires in the Canadian boreal forest <b>B. D. Amiro, K. A. Logan, B. M. Wotton, M. D. Flannigan, J. B. Todd, B. J. Stocks and D. L. Martell</b></p>	391–400		<p>A climatology of Canadian Fire Weather Index (FWI) System components and head fire intensities was derived for fires greater than 2 km<sup>2</sup> in size for the boreal and taiga ecozones of Canada from 1959 to 1999. Most parameters did not show trends over the period because of large interannual variability.</p>
<p>Eye-safe lidar measurements for detection and investigation of forest-fire smoke <b>Andrei B. Utkin, Armando Fernandes, Alexander Lavrov and Rui Vilar</b></p>	401–412		<p>Eye safety in lidar-assisted wildland fire detection is achieved by increasing the beam divergence of a Nd:YAG 1064-nm laser. The lidar maintains its ability to detect smoke plumes efficiently and allows scanning of the internal structure of smoke plumes near fire plots. Examples are given as smoke concentration plots on topographic maps.</p>
<p>Living with fire: homeowner assessment of landscape values and defensible space in Minnesota and Florida, USA <b>Kirsten C. Nelson, Martha C. Monroe, Jayne Fingerman Johnson and Alison Bowers</b></p>	413–425		<p>Homeowners' preferences for landscapes are documented for wildfire-prone areas in Minnesota and Florida, USA. The dominant preference was for 'natural' landscapes with vegetated views, wildlife, recreation, and privacy. Homeowners recognize wildfire risk but vary in their perceptions of effective protection techniques and willingness to act.</p>
<p>Effect of a controlled burn on the thermophysical properties of a dry soil using a new model of soil heat flow and a new high temperature heat flux sensor <b>W. J. Massman and J. M. Frank</b></p>	427–442		<p>An experimental burn at Manitou Experimental Forest, within the Rocky Mountains of southern Colorado, USA, heated the upper 10 cm of soil to over 300°C. However, the soil's thermal properties, which were measured before and after the fire by <i>in situ</i> methods and used as surrogates for soil structure, did not show any significant changes.</p>
<p>Season of burn and nutrient losses in a longleaf pine ecosystem <b>L. R. Boring, J. J. Hendricks, C. A. Wilson and R. J. Mitchell</b></p>	443–453		<p>In field studies comparing seasonal prescribed burning in longleaf pine woodlands, maximum temperatures did not exceed 700°C. Greater N loss occurred in growing season burns than in winter. Mass and N losses were about 80–95% of total litter and groundcover. No P losses were detected. Losses were less than inputs by legume N fixation and atmospheric deposition.</p>
<p>Interactions between antecedent climate and wildfire variability across south-eastern Arizona <b>Michael A. Crimmins and Andrew C. Comrie</b></p>	455–466		<p>Long-term antecedent climate conditions are often overlooked as important drivers of wildfire variability. This study examines relationships between wildfire statistics (total area burned and total number of fires) aggregated for south-eastern Arizona and antecedent climate conditions for the period 1973–2001. Positive correlations between lagged precipitation and total area burned highlight the importance of climate in regulating fine fuel production for both high and low elevation fires.</p>
<p>Site environment characterization of downed woody fuels in the Rincon Mountains, Arizona: regression tree approach <b>Erick Sánchez-Flores and Stephen R. Yool</b></p>	467–477		<p>Downed woody fuel loads in the forested area of the Rincon Mountains near Tucson, Arizona were predicted based on topography, fire history, and vegetation type using Classification and Regression Trees (CART) methods. CART models show vegetation type and slope are best predictors of fine woody fuel loads. Differences in elevation are the best predictors of coarse woody fuel loads.</p>

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Development of a laboratory protocol for fire performance of landscape plants <i>Matthew G. Etlinger and Frank C. Beall</i>	479–488	Ornamental vegetation near structures poses one of the highest hazards to loss of structures to interface fire. Nine species of whole, widely used ornamental plants were water stressed in a compartment and subjected to a controlled direct-flame exposure. The key variables that affected their heat release were the fraction of foliage and the reduction of foliar moisture content due to water stressing.
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