

# *International Journal of Wildland Fire*

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Contents	Volume 15	Issue 3	2006
<p>Effect of fire retardant application on phosphorus leaching from Mediterranean forest soil: short-term laboratory-scale study <b>A. Pappa, N. Tzamtzis and S. Koufopoulou</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 287–292.</p>			<p>This paper presents the leaching of P due to FIRE-TROL 931 application from pots, with forest soil and pine trees alone, and in combination with fire. The concentrations of P in the leachates were found to be a small percentage of the P applied initially. However, differences were present among treated samples, affected by both plant and fire conditions.</p>
<p><i>Research note</i> Evaluation of forest fire retardant removal from forest fuels by rainfall <b>Gavriil Xanthopoulos, Dany Ghosn and George Kazakis</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 293–297.</p>			<p>Use of long-term retardants for fire prevention purposes requires knowledge about weathering of retardants with time. Rainfall may lead to retardant depletion from forest fuels. The rate of depletion was evaluated experimentally using Aleppo pine needles exposed to natural rain. A regression equation was developed to estimate the percentage of retardant removed as a function of rainfall quantity and duration.</p>
<p><i>In situ</i> measurements of water vapor, heat, and CO<sub>2</sub> fluxes within a prescribed grass fire <b>Craig B. Clements, Brian E. Potter and Shiyuan Zhong</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 299–306.</p>			<p>Measurements were made within a prescribed grass fire and showed significant increases of turbulence, heat, water vapor, and CO<sub>2</sub> concentrations. The results indicate that grass fires can modify the dynamic environment by adding heat as well as water vapor to the lower atmosphere.</p>
<p>Remote sensing of fire regimes in semi-arid Nusa Tenggara Timur, eastern Indonesia: current patterns, future prospects <b>Rohan Fisher, Wilfrida E. Bobanuba, Agus Rawambaku, Greg J. E. Hill and Jeremy Russell-Smith</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 307–317.</p>			<p>Substantial areas of eastern Indonesia are semi-arid with extensive areas of highly fire-prone savanna grasslands and woodlands. We address the efficacy of applying fire mapping methodologies as developed in adjacent Australian savanna landscapes. The application of different image sensors for fire mapping and hotspot detection is considered. We conclude that fire mapping information will be increasingly useful for land and fire management in monsoonal, fire-prone eastern Indonesia.</p>
<p>Remote sensing techniques to assess active fire characteristics and post-fire effects <b>Leigh B. Lentile, Zachary A. Holden, Alistair M. S. Smith, Michael J. Falkowski, Andrew T. Hudak, Penelope Morgan, Sarah A. Lewis, Paul E. Gessler and Nate C. Benson</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 319–345.</p>			<p>A comprehensive review of remote methods used to monitor active fire characteristics and post-fire effects is presented. The remote sensing and fire ecology terminology is clarified and both challenges and recommendations of future research are discussed.</p>
<p>Time series of chaparral live fuel moisture maps derived from MODIS satellite data <b>Douglas Stow, Madhura Niphadkar and John Kaiser</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 347–360.</p>			<p>Maps of live fuel moisture conditions for chaparral shrublands of southern California during the fire danger season are derived from MODIS satellite data. Useful to fire managers, these are based on the strong relationship between normalized difference indices from MODIS data and ground-level live fuel moisture measurements.</p>
<p>Spatial patterns of forest fires in Canada, 1980–1999 <b>Marc-André Parisien, Vernon S. Peters, Yonghe Wang, John M. Little, Erin M. Bosch and Brian J. Stocks</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 361–374.</p>			<p>This study characterized the fire size, shape, clustering, and geographic orientation of forest fires in Canada using a database of large fires from 1980 to 1999. The outputs were compared among fire-dominated areas and their relationship to a set of factors that influence the fire regime at the ecozone level was assessed.</p>
<p>A 229-year dendroclimatic-inferred record of forest fire activity for the Boreal Shield of Canada <b>Martin P. Girardin, Yves Bergeron, Jacques C. Tardif, Sylvie Gauthier, Mike D. Flannigan and Manfred Mudelsee</b> <i>International Journal of Wildland Fire</i> <b>15</b>, 375–388.</p>			<p>The relevance of tree-ring data to the study of variability in fire activity on the Canadian Boreal Shield is demonstrated. Our multicentury statistical reconstructions of fire activity place recent changes within the long-term history of the forests. The reconstructions also provide quantitative means for measuring the control of climate on fire activity.</p>

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*Research note*

Temporal and spatial characteristics of forest fires in South Korea between 1970 and 2003

**Byungdoo Lee, Pil Sun Park and Joosang Chung**  
*International Journal of Wildland Fire* **15**, 389–396.

Patterns of forest fire in South Korea were examined. Time series analysis and F-test on forest fire occurrences, burned area, and fire area growth rate showed the seasonal change of forest fires, enabling estimation of the forest fire precautionary period. Cities and counties were categorized into three groups based on the spatial characteristics of forest fire.

Recent fire regime in peninsular Spain in relation to forest potential productivity and population density

**Antonio Vázquez de la Cueva, José Manuel García del Barrio, Marta Ortega Quero and Otilio Sánchez Palomares**  
*International Journal of Wildland Fire* **15**, 397–405.

The main purpose of this work was to test, at a regional scale and in populated territories, the empirical relationship between two main climatic-controlled processes: fire incidence and forest productivity. We obtained a positive pattern of relationships, i.e. a higher fire incidence registered in more productive places, suggesting that fuels have a large control on fire incidence.

Fire regime and post-fire Normalized Difference Vegetation Index changes in the eastern Iberian peninsula (Mediterranean basin)

**Dania Abdel Malak and Juli G. Pausas**  
*International Journal of Wildland Fire* **15**, 407–413.

This study focuses on the effect of time since fire, precipitation, and bedrock types on post-fire Normalized Difference Vegetation Index changes in the Mediterranean using satellite images. It provides evidence of the negative effects of increasing fire recurrence observed in the last decades on vegetation regeneration.

Indications of vigor loss after fire in Caribbean pine (*Pinus caribaea*) from electrical resistance measurements

**Timothy E. Paysen, Andrea L. Koonce, Edwin Taylor and Maria Ouxiliadora Rodriguez**  
*International Journal of Wildland Fire* **15**, 415–425.

Tree vigor was compared among stands of burned and unburned Caribbean pine in north-eastern Nicaragua. Metabolic activity was used as a measure of vigor, as indicated by electrical resistance of cambium cells. Burned trees had significantly lower vigor levels than unburned trees. Confounding effects of competition removal, as a result of tree mortality, did not exist due to Caribbean pine's inherent resistance to fire.

Ignition of mulch and grasses by firebrands in wildland–urban interface fires

**Samuel L. Manzello, Thomas G. Cleary, John R. Shields and Jiann C. Yang**  
*International Journal of Wildland Fire* **15**, 427–431.

This study examines how firebrands created by wildland–urban interface fires ignite fuel beds. An apparatus was constructed to investigate the ignition propensity of fuel beds due to impingement of firebrands. Ignition regime maps were generated as a function of impacting firebrand size, number of deposited firebrands, air flow, and material moisture content.

*Letter to the editor*

Fire history in ponderosa pine landscapes of Grand Canyon National Park: is it reliable enough for management and restoration?

**William L. Baker**  
*International Journal of Wildland Fire* **15**, 433–437.

A common method of studying fire history is shown to underestimate the fire rotation and omit analysis of evidence needed to establish that high-severity fires were lacking in the past. Together these methodological problems mean that national park restoration programs, if based on this method of research, lack a sound scientific basis.

*Letter to the editor*

Fire histories in ponderosa pine forests of Grand Canyon are well supported: reply to Baker

**Peter Z. Fulé, Thomas A. Heinlein and W. Wallace Covington**  
*International Journal of Wildland Fire* **15**, 439–445.

Fire-scarred trees cannot provide perfect reconstructions of past fires. However, fire rotation calculations and tree age inferences used by Baker to assert long fire-free periods and extensive stand-replacing fire prior to 1880 in ponderosa forests are flawed. Fire scars, together with historical, paleoecological, and evolutionary evidence, are consistent with a historically frequent surface fire regime.

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