

# *International Journal of Wildland Fire*

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Contents	Volume 15	Issue 1	2006
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Obituary: Frank Albini <b>Patricia L. Andrews</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 1–2.			
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Prediction and measurement of thermally induced cambial tissue necrosis in tree stems <b>Joshua L. Jones, Brent W. Webb, Bret W. Butler, Matthew B. Dickinson, Daniel Jimenez, James Reardon and Anthony S. Bova</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 3–17.	This paper presents a deterministic predictive tool linking a model for heat transfer in tree stems and a model for the resulting thermally induced tissue damage. Predictions compare favorably with experimental data for four common North American species: red maple ( <i>Acer rubrum</i> ), chestnut oak ( <i>Quercus prinus</i> ), ponderosa pine ( <i>Pinus ponderosa</i> ), and Douglas-fir ( <i>Pseudotsuga menziesii</i> ).		
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Prediction of delayed mortality of fire-damaged ponderosa pine following prescribed fires in eastern Oregon, USA <b>Walter G. Thies, Douglas J. Westlind, Mark Loewen and Greg Brenner</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 19–29.	Prescribed burns in six replicate stands in the southern Blue Mountains of Oregon were observed for four growing seasons. Logistic regression was used to evaluate nine fire damage and tree morphological variables from 3415 ponderosa pine. Full (five-factor) and reduced (two-factor) models are presented for projecting probability of delayed mortality.		
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Post-fire epicormic branching in Sierra Nevada <i>Abies concolor</i> (white fir) <b>Chad T. Hanson and Malcolm P. North</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 31–35.	This paper is the first report of epicormic branching on the boles of white fir 3 and 4 years after a wildfire in the central Sierra Nevada Mountains. Epicormic sprouting increased with increasing severity of crown loss and was significantly more common on large v. small diameter trees.		
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Heterogeneity in fire severity within early season and late season prescribed burns in a mixed-conifer forest <b>Eric E. Knapp and Jon E. Keeley</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 37–45.	Two measures of fire severity were evaluated for prescribed burns conducted in the early season when surface fuels were relatively moist, and in the late season when surface fuels were dry. Fire severity was most strongly associated with topography, overstory tree composition, fuel continuity, burn season, and measures of fuel loading. The influence of non-fuel loading-related factors suggests that prescribed burns can produce considerable heterogeneity in fire severity even under high fuel loading conditions.		
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Predicting the ignition of crown fuels above a spreading surface fire. Part I: model idealization <b>Miguel G. Cruz, Bret W. Butler, Martin E. Alexander, Jason M. Forthofer and Ronald H. Wakimoto</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 47–60.	This paper describes a model developed to predict the onset of crowning based on the theory and principles of heat transfer. The model integrates the characteristics of the heat source as defined by flame front properties of the surface fire, the buoyancy of the surface fire's plume, the heat sink as described by the nature of the crown fuel particles, and the energy transferred (gain and losses) to the crown fuels. The final model output is the temperature of the crown fuel particles, which upon attaining a critical ignition temperature, are assumed to ignite.		
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Predicting the ignition of crown fuels above a spreading surface fire. Part II: model evaluation <b>Miguel G. Cruz, Bret W. Butler and Martin E. Alexander</b> <i>International Journal of Wildland Fire</i> <b>15</b> , 61–72.	This paper presents the evaluation of a semi-physically based model aimed at predicting the initiation of crown fires. The evaluation protocol consisted of a sensitivity analysis of the input parameters, comparison with other crown fire initiation models under different burning conditions, and testing against experimental fires. Results have provided new insights into factors controlling the onset of crowning.		

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Influence of heat and smoke treatments on the germination of six leguminous shrubby species

**Mercedes Rivas, Otilia Reyes and Mercedes Casal**

*International Journal of Wildland Fire* **15**, 73–80.

In order to evaluate the impact of fire on shrubland leguminous species on the north-western Iberian Peninsula attention was centred on the influence of fire, high temperatures, and smoke. The degrees of stimulation and inhibition produced are different in each species and this increase in germination is more advantageous ecologically in non-resprouter species.

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Seed predation by birds shortly after a wildfire in a Corsican pine forest

**Jean-Claude Thibault and Roger Prodon**

*International Journal of Wildland Fire* **15**, 81–86.

In the mountains of Corsica, the dominant tree is the Corsican pine where 29 bird species live, included the endemic and threatened Corsican nuthatch and the coal tit. They eat mainly pine seeds from late autumn to spring. The present paper documents a particular aspect of the short-term response of these birds – namely, the predation of seeds – during and immediately after a large summer wildfire in Corsican pine forest.

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Spatio-temporal analysis of wildfire ignitions in the St Johns River Water Management District, Florida

**Marc G. Genton, David T. Butry, Marcia L. Gumpertz and Jeffrey P. Prestemon**

*International Journal of Wildland Fire* **15**, 87–97.

The clustering in space, time, and space–time of the occurrence and cause of wildfires in the north-east region of Florida is investigated by means of tools from point pattern analysis.

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Soil water dynamics after fire in a Portuguese shrubland

**Joaquim S. Silva, Francisco C. Rego**

**and Stefano Mazzoleni**

*International Journal of Wildland Fire* **15**, 99–111.

This paper shows that for the conditions studied fire was responsible for comparatively higher soil water content, presumably due to lower water uptake by plants. The study includes: pre-fire data, soil water measurements down to a depth of 170 cm, and the assessment of post-fire effects over a 3-year period.

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*Bromus tectorum* cover mapping and fire risk

**Steven O. Link, Carson W. Keeler, Randal W. Hill and Eric Hagen**

*International Journal of Wildland Fire* **15**, 113–119.

Fire risk in western North America has increased with increasing cover of *Bromus tectorum*. Fire risk ranged from about 46% with an average of 12% *B. tectorum* cover to 100% when cover was greater than 45%. Fine resolution *B. tectorum* cover and fire risk maps were made using aerial photography.

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Science, technology, and human factors in fire danger rating: the Canadian experience

**Stephen W. Taylor and Martin E. Alexander**

*International Journal of Wildland Fire* **15**, 121–135.

Effective national wildland fire danger rating systems must integrate scientific, technological, and human factors in a manner that is appropriate to the physical, economic, institutional, and cultural environment, and must evolve as fire management objectives change. Most importantly, common vision and a sense of common cause are needed.

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Analysing initial attack on wildland fires using stochastic simulation

**Jeremy S. Fried, J. Keith Gilles and James Spero**

*International Journal of Wildland Fire* **15**, 137–146.

The analytical capacity of stochastic models to inform decisions about initial attack of effectiveness under alternative configurations of the initial attack system is illustrated using the California Fire Economics Simulator for the cases of multiple fire starts, diversion of line-building resources to structure protection, alternate basing arrangements, and multi-agency cooperation.

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