

# *International Journal of Wildland Fire*

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Contents	Volume 13	Number 1	2004
Notice to Authors	(iii)–(vi)		
Long-term forest fire retardants: a review of quality, effectiveness, application and environmental considerations <i>Anna Giménez, Elsa Pastor, Luis Zárate, Eulàlia Planas and Josep Arnaldos</i>	1–15		Long-term forest fire retardants are chemical substances widely used to reduce the combustibility of fuels. The different factors that influence the effectiveness of these fire retardants have been studied with the aim of improving their use. This article introduces the state of the art regarding the most significant factors involved in the use and effectiveness of forest fire retardants.
Where's the fire? Quantifying uncertainty in a wildfire threat model <i>S. D. Jones, M. F. Garvey and G. J. Hunter</i>	17–25		Models of wildfire threat are often used in the management of fire-prone areas. Such models use mapped or geographical data as inputs. Inaccuracies in these data may lead to erroneous predictions of wildfire threat. Using simulation techniques, possible scenarios of over- and under-estimating wildfire risks are assessed for an Australian wildfire threat model.
Prescribed fire, soils, and stream water chemistry in a watershed in the Lake Tahoe Basin, California <i>Scott L. Stephens, Thomas Meixner, Mark Poth, Bruce McGurk and Dale Payne</i>	27–35		With a large increase of prescribed fire forecasted in the next decades, it is important to learn about the impacts of fire on stream water chemistry. In the Lake Tahoe Basin, California, stream water calcium concentrations increased in burned watersheds whereas soluble phosphorus concentrations were not changed. Stream monitoring data indicates that the stream water quality effects lasted for approximately 3 months.
Fire spread across pine needle fuel beds: characterization of temperature and velocity distributions within the fire plume <i>Thierry Marcelli, Paul A. Santoni, Albert Simeoni, Eric Leoni and Bernard Porterie</i>	37–48		An original method was developed to measure in a finest way the temperature and upward gas velocity distribution within a flame of a fire spreading across a pine needle fuel bed, in laboratory conditions. The experimental data were compared to a physical 2-phase model of forest fire behavior.
Description of a coupled atmosphere–fire model <i>Terry L. Clark, Janice Coen and Don Latham</i>	49–63		A new treatment for fireline motion is presented appropriate for coupled fire–atmosphere models. The method uses four points in each fuel cell defining both the region burning as well as the fire line position. Instead of prescribing the fireline shape, it evolves through fire–atmosphere interactions. Tests are presented showing the methods performance both with and without fire–atmosphere interactions.
Estimation of the radiation extinction coefficient of natural fuel beds <i>Gilberto C. Vaz, Jorge C. S. André and Domingos X. Viegas</i>	65–71		Calculation of radiation heat transfer terms in a fire spread model requires the previous estimation of the radiation extinction coefficient of the fuel bed. For homogeneous and isotropic beds of pine needles in a normal range of packing-ratio, we verified that the standard estimation formula is in error by no more than 10%. But for a non-isotropic bed, much more common in nature, the error may be significantly larger. Two alternative formulae are thus proposed, respectively for predominantly horizontal and vertical radiation, which are shown, in a particular case, to have errors less than 5%.

Ecological impacts of wheat seeding after a Sierra Nevada wildfire <b>Jon E. Keeley</b>	73–78	Post-fire seeding of burned sites had negative ecosystem impacts in this ponderosa pine forest, including loss of native plant diversity and changes in community structure. The massive seeding had a positive effect on reducing first year alien invasion. Negative impacts may continue in subsequent years because of the ecological vacuum created by the loss of the non-persistent variety of cereal grass and extensive thatch that could contribute to repeat fires.
Fuel characteristics and fire behaviour in mature Mediterranean gorse shrublands <b>Martín De Luis, Manuel J. Baeza, José Raventós and José C. González-Hidalgo</b>	79–87	Because of increased fire frequency, gorse shrublands have expanded significantly in western Mediterranean regions. Mediterranean gorse ( <i>Ulex parviflorus</i> ) is a fire-prone community and its presence increases the risk that new fires might occur. Our results show mature gorse shrublands to be communities with high biomass values in which the proportion of fine dead fuel fractions with low moisture content is around 50%. Both the fire-line intensity values and the fire severity values observed can be considered high with respect to those observed in other Mediterranean communities, thus confirming Mediterranean gorse as a high-risk community.
Statistical analysis of fire frequency models for Catalonia (NE Spain, 1975–1998) based on fire scar maps from Landsat MSS data <b>Ricardo Díaz-Delgado, Francisco Lloret and Xavier Pons</b>	89–99	Fire frequency is one of the most relevant patterns characterizing fire regimes of any region in the world. The occurrence in time of fires helps to locate recurrently burned areas and define consequent management plans. A fire history map has been reconstructed for Catalonia (NE Spain) by means of remote sensing images of the last 24 years in order to assist in analyzing fire regime in this region.
On the existence of a steady state regime for slope and wind driven fires <b>Domingos X. Viegas</b>	101–117	This study based on laboratory experiments showed that, whenever wind velocity or terrain slope is high, fire has a dynamic behaviour and its rate of spread changes during fire growth. We demonstrated that a steady-state regime in fire propagation cannot be claimed in the general case and that, even in some nominally permanent and uniform boundary conditions, the rate of spread does not remain constant.
Spatial models for estimating fuel loads in the Black Hills, South Dakota, USA <b>Robin M. Reich, John E. Lundquist and Vanessa A. Bravo</b>	119–129	Methods were developed for estimating fuel loading distributions to a 30 m resolution using a combination of field data, topographic data and Landsat imagery. The models provide potentially useful information to managers that need predictions of forest fuel distributions to make decisions regarding fire hazard and risk.
<b>Corrigendum to:</b>		
Assessing woody vegetation cover change in north-west Australian savanna using aerial photography <b>R. J. Fensham and R. J. Fairfax</b> Volume 12, Numbers 3 and 4 (2003), pages 359–367	131	Certain parameter terms in Table 5 were incorrectly given positive rather than negative values.