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Contents **Volume 18** **Issue 5** **2009**

Implications of changing climate for global wildland fire
Mike D. Flannigan, Meg A. Krawchuk, William J. de Groot, B. Mike Wotton and Lynn M. Gowman
International Journal of Wildland Fire **18**, 483–507

This paper reviews current research on climate change and global wildland fire and suggests directions for future research and management. We expect more fire activity in a warmer world but there is still much we do not know owing to our limited understanding of key interactions between weather, vegetation and people.

Forecasting distributions of large federal-lands fires utilizing satellite and gridded weather information
Haiganoush K. Preisler, Robert E. Burgan, Jeffery C. Eidenshink, Jacqueline M. Klaver and Robert W. Klaver
International Journal of Wildland Fire **18**, 508–516

We present a statistical model to assess the skill of fire danger indices and to forecast expected numbers of fires in a forthcoming week. As an example, we use the fire potential index to forecast expected numbers of fires of various size classes on 1-km^2 grids within US federal lands.

Validation studies of EUMETSAT's active fire monitoring product over Turkey
Ahmet Emre Tekeli, İbrahim Sönmez, Erdem Erdi and Fatih Demir
International Journal of Wildland Fire **18**, 517–526

This paper presents an active fire product accuracy assessment of Meteosat Second Generation (MSG) satellite, one of EUMETSAT's geostationary satellites, over Turkey for the summer of 2006. Product limitations arising from pixel resolution and fire coverage were examined. Effects of burnt area and fire timing indicated in fire reports on the accuracy assessment were analyzed.

Flatland in flames: a two-dimensional crown fire propagation model
James D. Dickinson, Andrew P. Robinson, Paul E. Gessler, Richy J. Harrod and Alistair M. S. Smith
International Journal of Wildland Fire **18**, 527–535

We propose and test a crown fire propagation model that uses a convenient two-dimensional crown fuel metric against the current model, which uses a three-dimensional crown fuel metric. The proposed model performs better using the original data, and equivalently for predicting critical rate of spread on 2626 forest inventory plots.

Effect of vegetation heterogeneity on radiative transfer in forest fires
François Pimont, Jean-Luc Dupuy, Yves Caraglio and Dominique Morvan
International Journal of Wildland Fire **18**, 536–553

We investigate the impact of the departure from randomness of natural fuel distributions on the radiative transfer of energy in forest fires. It helps to understand which heterogeneity scales are likely to affect the fire behaviour and how these scales can be integrated in models.

A new look at the role of fire-released moisture on the dynamics of atmospheric pyro-convection
Gunnar Luderer, Jörg Trentmann and Meinrat O. Andreae
International Journal of Wildland Fire **18**, 554–562

In assessing the role of fire-released moisture on the dynamics of moist convection ('pyro-clouds') induced by large fires, we found (*a*) that fire-released moisture account only for a small portion of the total water of the pyro-cloud, and (*b*) that moisture release was of much lesser significance than the sensible heating from the fire for the convection dynamics and injection height.

Regional variations in wildfire susceptibility of land-cover types in Portugal: implications for landscape management to minimize fire hazard
Francisco Moreira, Pedro Vaz, Filipe Catry and Joaquim S. Silva
International Journal of Wildland Fire **18**, 563–574

This study evaluated the land-cover types preferred and avoided by wildfires in Portugal. Shrublands were the most fire-prone land cover, whereas crops and agro-forestry systems were the most avoided by fire. Conifers were more susceptible than eucalyptus, and broadleaved forests were the least fire-prone forest type.

Landscape structural features control fire size in a Mediterranean forested area of central Spain
Olga Viedma, D. G. Angeler and José M. Moreno
International Journal of Wildland Fire **18**, 575–583

We investigated whether landscape structural features determine fire size in a Mediterranean area of central Spain. Our results show that there were discontinuities in landscape characteristics across the fire edge along the fire perimeters of 110 fires analysed. Therefore, landscape structural features may control fire size in Mediterranean landscapes.

Relationships among indices of fire severity in riparian zones
Jessica E. Halofsky and David E. Hibbs
International Journal of Wildland Fire **18**, 584–593

Although it is often assumed that different fire severity measures are closely related, this study found weak relationships between overstorey and understorey fire severity indices and also between ground-based and remotely sensed fire severity indices in riparian areas.

Remote sensing for prediction of 1-year post-fire ecosystem condition
Leigh B. Lentile, Alistair M. S. Smith, Andrew T. Hudak, Penelope Morgan, Michael J. Bobbitt, Sarah A. Lewis and Peter R. Robichaud
International Journal of Wildland Fire **18**, 594–608

We compare and evaluate the applicability of immediate post-fire estimates of percentage char and vegetation fractions, in addition to NBR and dNBR derived from Landsat ETM+ imagery, to remotely predict 1-year post-fire ecological effects. The char and green fractions are versatile indicators of canopy and subcanopy effects and longer-term effects related to fire behavior.

The effects of fire on avian communities: spatio-temporal attributes of the literature 1912–2003
Andreas Leidolf and John A. Bissonette
International Journal of Wildland Fire **18**, 609–622

This document reviews the temporal, geographic, and biogeographic distribution, as well as relevant research and publication attributes, of 512 documents addressing the effects of fire on avian communities. Relevant attributes of all documents are summarized to identify patterns. In addition, full citations of all documents are provided in the Accessory publication.

Patterns of post-fire flowering and fruiting in *Chlorogalum pomeridianum* var. *pomeridianum* (DC.) Kunth in southern California chaparral
Mark Borchert and Claudia M. Tyler
International Journal of Wildland Fire **18**, 623–630

We investigated flowering and fruit production of the chaparral geophyte *Chlorogalum pomeridianum* (common soap plant) in response to fire. Though greatly enhanced following fire, flowering and reproduction was not strictly fire-dependent. Flower and fruit production were related positively to bulb size and leaf area, and did not occur unless a minimum bulb size was attained.

Fuel reduction burn in Florida.
Photo: David Sussman