

ISSN 0171-1113

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Publisher	Gesellschaft für Ökologie e.V. (GfÖ) Institut für Ökologie, Technische Universität Berlin, Rothenburgerstr. 12, 12165 Berlin, Germany Phone +49 (0) 30-314 713 96, Fax +49 (0) 30-314 713 55, www.gfoe.org , info@gfoe.org
Series title	Verhandlungen der Gesellschaft für Ökologie – Band 47/48
Editors	Yoko Muraoka, University of Natural Resources and Life Sciences, Vienna, Austria Roman Tschirf, Grafikstudio WK, Nürnberg, Germany
Production	Institute of Zoology, Department of Integrative Biology and Biodiversity Research, University of Natural Resources and Life Sciences, Vienna, Gregor-Mendel-Straße 33, 1180 Vienna, Austria
Cover design	roman.tschirf@grafikwk.de
Print	Druckerei Hans Jentzsch & Co GmbH, Scheydgasse 31, 1210 Vienna

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This booklet is also available for download as electronic document on the conference website (www.gfoe.conference.de).

ECOLOGY –
MEETING THE SCIENTIFIC
CHALLENGES OF A
COMPLEX WORLD

48th Annual Meeting
of the Ecological Society
of Germany, Austria and Switzerland

Gesellschaft für Ökologie e.V. (GfÖ)

University of Natural Resources and Life Sciences, Vienna

10 – 14 September 2018

SESSION 22-P4

Forest fires analysis using remote sensing techniques: a case study in East Serbia

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Forest fires have a significant impact on the humans and environment and remote sensing techniques play an important role in forest fire management. As an environmental monitoring tool, remote sensing allows us to observe nature before, during, and after the fire occurrence. In the past decades, large forest fires were registered in South and Southeast Europe, including Serbia. Several extensive fires occurred in the area of Svrljiške Planine and Stara Planina Mountains (East Serbia) in July 2007. The aims of this study were to detect and analyze damage caused by fire and land cover change in this area from 2007–2017. Atmospherically corrected Landsat 5 & 8 data were downloaded via USGS Earth Explorer application. Machine learning Random Forest (RF) algorithm for pixel based supervised classification was employed to obtain six different classes: artificial area, bare soil, water, agricultural area, pasture, and forest. Results showed remarkable changes in two classes – decrease of pastures for 23.74 % and increase of forests for 20.86 %, which can be explained by natural revegetation. The analysis for other classes did not show significant oscillations.