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# ECOLOGY –
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## 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.