



Estimating burn severity in a fragmented landscape using satellite MODIS data

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What are the various ecological effects caused by fires of different severity?

Traditional methods of recording burn severity involve expensive and time-consuming field survey. The available remote sensing technologies, such as satellite images, may allow to develop standardized burn-severity maps for evaluating a number of fire effects and addressing fire management issues.

This paper is focused on preliminary results we obtained from ongoing research on spatial variability of fire effects on vegetation from large wildfires, which burned in the Southern Italy during several fire seasons. The main objective of this study was to compare the field burn severity and satellite image-derived indicators of burn severity. Multidate (pre and post fire) of the relative version of the delta Normalized Burn Ratio (dNBR) were investigated to measure and quantify the ecological effects of fire using pre-fire and post-fire MODIS satellite images.

The efficacy of MODIS-based estimation were evaluated using independent data set such as field survey, metrics from satellite time series and higher resolution satellite data.

Preliminary results showed the capability of MODIS for assessing and monitoring of fire effects over time. MODIS derived information are effective data source for evaluating erosion/runoff, biomass and carbon issues, and other issues using mapped burn severity.