

Conflict, Narratives and Forest Fires in Eastern Turkey

Within Turkey, claims of an increasing number of forest fires ignited by the Turkish military to ‘strategically degrade the environment’ broke out after the Turkish-Kurdish peace process ended in 2015. These claims are built on little evidence, and fire occurrences are not well documented. Yet, the issue has gained attention through the news and social media in recent years (Nurcan Baysal 2018; Stockholm Center for Freedom 2018). The lack of objective, scientific, data presents a need for a quantitative assessment of these fires in the context of conflict and political instability. Modern techniques in remote sensing and GIS can be used to retrospectively account for these fires.

The research uses a multi-temporal/ multi-scale approach provided in three parts, including: 1) the characterization of alleged fires (from 2016 to 2018) at a local scale, 2) assessment and validation of 9 years of fire data on the provincial scale and, 3) statistical analysis and hypothesis testing (i.e., Spearman Rank Correlation Test) for the association between 15 years of fire and conflict data at the national/provincial scale. Parts one and two focus on Tunceli Province at the local and provincial scale, and part three focuses on analyzing fire accounts from Diyarbakir, Hakkari, and Tunceli provinces against Turkey’s national conflict data.

In part one, a relativized burn ratio (i.e., RBR) was calculated to determine fire severity, and 77% of the burned area identified as low severity burns (USGS 2004). In part two, trends showed increases in fires and burned area after the year 2015, and the fire product validation found an overall map accuracy of > 90%. Part three determined a statistically significant association between the conflict and fire data in all three provinces. Results from these experiments demonstrate the capabilities and usefulness of modern techniques in remote sensing for quantitative assessments of fire patterns within the context of conflict and political instability. Furthermore, the remote sensing data partially supports local claims that the fires are occurring and have increased after the year 2015.

Keywords: geography, wildfire, warfare ecology, burned area, fire detection, multi-temporal analysis, quantitative assessment, Tunceli, Turkey

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