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Forest fire scenario and challenges of mitigation during fire season in North East India

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Keywords: Forest fire, North Eastern Region, Fire hazard map, fire mitigation, fire spread, DEM, shifting cultivation, MODIS

Abstract. Forest fires are a major environmental problem in North East Region (NER) with large tracts of forest areas being affected in every season. Forest fires have become a major threat to the forest ecosystems in the region, leading to loss of timber, biodiversity, wildlife habitat and loss to other natural resources. Studies on forest fire have reported that about 50% of forest fire in the country takes place in NE region. The forest fire in NER is anthropogenic in nature. The forest fire hazard map generated based on appropriate weightage given to the factors affecting fire behavior like topography, fuel characteristic and proximity to roads, settlements and also historical fire locations helped to demarcate the fire prone zones. Whereas, during fire season the weather pattern also governs the fire spread in the given area. Therefore, various data on fuel characteristics (land use/land cover, forest type map, forest density map), topography (DEM, slope, aspect) proximity to settlement, road, waterbodies, meteorological data from AWS on wind speed, wind direction, dew point have been used for each fire point to rank its possible hazard level. Near real time fire location data obtained from MODIS/FIRMS were used to generate the fire alerts. This work demonstrates dissemination of information in the form of maps and tables containing information of latitude and longitude of fire location, fire occurrence date, state and district name, LULC, road connectivity, slope and aspect, settlements/water bodies and meteorological data and the corresponding rating of possibility of fire spread to the respective fire control authorities during fire season.

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