

REPORT



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Introduction

The fire incidence model is an important tool for predicting the likelihood of a fire breakout in a specific region or place. This model must be analysed in order to determine the accuracy of its predictions, identify its strengths and flaws, and offer adjustments to make the model more effective. The purpose of this project is to work on the initial spatial analysis testing aspect of the project.

Analysis

The first step of the analysis was to clip Digital Elevation Model (DEM), Land cover, Roads, Rivers, etc. to the study area (Boland Complex Mountain). The features were reclassified using the Reclassifying tool. The tested fire incidence model is based on the weighted overlay approach, which takes reclassified parameters into account: fuel type, elevation, gradient, aspect, and buffered roads. The concept behind this strategy is that areas with comparable topography typically have similar meteorological conditions, which might influence the spread and intensity of fires. To assess the model's performance, recorded fire occurrences were compared to predictions provided by each of the three models. The findings of this investigation can shed light on how effectively the model predicts fires and whether it is useful for anticipating fire danger.

The results showed that weighted overlay is more accurate in fire prediction than fire count. Fire count only look at previous fires and does not consider the fuel type, elevation, gradient, aspect and buffered roads like the weighted overlay considers them.

Improvements and Learning experience

It may be possible to improve the fire incidence model by including additional data. Climate data, such as humidity, temperature, and wind speed, could be included to produce more precise estimates of fire danger. Also consider human behaviour and land use.

What I learned from examining this fire incidence model is that, while topographical characteristics are essential in predicting fire risk, more data and more sophisticated models may be required to produce reliable and accurate predictions.