Reducing social vulnerability can improve forest fires´ prevention? Designing a model to display the relation between social vulnerability and anthropogenic risk of wildfires in Galicia, Spain.

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Abstract

Since the beginning of the 21st century, most of the forest fires that have been produced in Spain have taken place in the northern region of Galicia. This area represents 5.8% of the Spanish territory, but concentrates, certain years, up to 50% of the total number of wildfires. Current research on forest fires is mostly focused on physical or meteorological characteristics, post-fire situations and their potential destructive capacities (main areas burned, type of vegetation, economic loses, etc.). However, academic research does not delve into other socio-economic factors (population structure, density, livestock farms, education, among others), that configure the existing pre-fire situation in the affected territories, and subsequently reflect a prevailing vulnerability of the population. Indeed, these socioeconomic variables can influence fire occurrence, whether positively or negatively. To fill in this knowledge gap, this article analyzes the relationship between wildfire events and the socio-economic variables that characterize the Galician municipalities affected. For this purpose, in the first place, a thorough examination and selection of the most relevant socioeconomic variables, and the subsequent justification will be carried out. Then, using IBM SPSS statistics 24, a linear regression will be executed using the data of wildfires that occurred in Galicia between 2001 and 2015. The result of the model will allow better knowledge of the importance of the socio-economic situation in Galician municipalities when wildfires appear. Therefore, this result will allow identify the existing relationship between the socioeconomic variables and wildfire events and, consequently, will help to optimize the interventions that must be done. This may be the best way to accomplish prevention actions in order to reduce vulnerability to forest fires.