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WILDLAND FIRES DETECTED THROUGH REMOTE SENSING IN THE STATE OF AMAZONAS, BRAZIL

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Wildland fires are responsible for negative impacts on the environment, causing damage to the fauna and flora and increasing the release of greenhouse gases. In the state of Amazonas, the wildland fires represents a huge risk for biodiversity conservancy since more than 95% of the state is covered by the Amazonia Rainforest, one of the largest and biodiverse tropical forest of the world. This study aimed to analyze the hot spots incidence in state of Amazonas through data from INPE reference satellites (NOAA-12 and AQUA_M-T) for the period of 1999-2016, and to correlate it with independent variables that, according to the literature, are likely to interfere in the wildland fire occurrence. The results showed a significant uptrend in the number of hot spots recorded over the years ($r^2=0.68$; $p<0.01$). The months with the highest occurrence were August and September (the months with less rainfall). The independent variables: pasture area ($r=0.94$), number of cattle ($r=0.90$), deforested area ($r=0.89$), municipality size ($r=0.27$), mean annual rainfall ($r=-0.26$) and forest area ($r=0.25$) correlated significantly ($p<0.05$) with the number of hot spots recorded for each municipality. The variables population density ($r=-0.08$), agriculture area ($r=0.07$), mean annual temperature ($r=0.05$) and total population ($r=-0.03$) presented no significant correlation. Using a wildland fire risk classification method, 3,4% of the Amazonas state area was classified in the "Very High" risk category; 20,6% in the "High"; 9,2% in the "Medium"; 6,9% in the "Low"; and most of the state area (59,8%) in the "Very Low" risk category. Based on the results obtained through this study it was possible identify the main variables that influence the wildland fire occurrence and the months and places with higher incidence in the state of Amazonas. Such data are of extreme importance in the application of efficient fire prevention activities.

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