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Abstract

Mapping Wildland–Urban Interface for Wildfires in Campina Grande do Sul and Quatro Barras, Paraná, Brazil †

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Abstract: Areas where humans and anthropogenic structures encounter or mix with vegetation are called wildland–urban interfaces. These areas present high fire risk; on the one hand, the presence of humans can contribute to the start of forest fires and, on the other, they can be drastically affected if a fire occurs. There are different methodologies for the classification of the wildland–urban interface, aiming to serve as a subsidy for preventive and vegetation fire-fighting policies. In Brazil, discussions about the theme are incipient. The municipalities of Campina Grande do Sul and Quatro Barras are located in the state of Paraná and have an extensive vegetative area with social interaction and, in addition, suffer from the presence of wildfires (460 occurrences from 2011 to 2016). The objective of the present study was to delimit the wildland–urban interface of these municipalities, relating to the occurrence of vegetation fires. To achieve the proposed objective, it was necessary to use a methodology for classifying wildland–urban interface areas, already established globally, based on the density of households and vegetation cover, dividing them into intermix and interface zones. The statistical grid of the Brazilian Institute of Geography and Statistics was used to obtain the density of households. The vegetation cover was obtained using the Brazilian Annual Land Use and Land Cover Mapping Project (MapBiomas) for 2019. The results showed that Campina Grande do Sul and Quatro Barras had coverages of 12.5 and 15.2% of municipal areas classified as wildland–urban interface, respectively. When distributing the geolocation of fires that occurred in the municipalities, 15.3% of these were present in wildland–urban interface areas from 2011 to 2016. Based on the results obtained, it is concluded that the delimitation of the wildland–urban interface with this method has potential use for the development of wildfire prevention policies.

Keywords: vegetation fire; urban–rural interface; forest fire

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