

## **Evaluation of Land Use in Rio Grande do Sul in Cities with a High Prevalence of Dengue Cases**

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**INTRODUCTION:** Anthropogenic actions have caused significant changes in the natural environment, altering the distribution of disease-transmitting species and, consequently, the incidence of infectious diseases. Like dengue, an infectious disease of viral etiology, prevalent in tropical climates, especially in urban and semi-urban areas. **OBJECTIVE:** This study aimed to assess the use of territory in cities in the state of Rio Grande do Sul with a high prevalence of dengue case notifications. **MATERIALS AND METHODS:** The study was based on data collected from the Unified Health System (DATASUS), referring to dengue cases reported between 2014 and 2022. The analysis focused on compiling the annual numbers of reported cases, identifying temporal and spatial patterns in the distribution of the disease, the second, using the MapBiomas project for annual mapping (2022) of land cover and land use. **RESULTS AND CONCLUSION:** The state of Rio Grande do Sul has an area of 281,707.151 km<sup>2</sup> and a population of 10,882,965 inhabitants, spread over 497 municipalities. The micro-regions with the highest number of dengue notifications were Porto Alegre (27,634), Gramado-Canela (12,571), Santa Cruz do Sul (7,681) and Lajeado-Estrela (6,940). However, the confirmed cases for Porto Alegre were n=6,185, Gramado-Canela n=4,442, Santa Cruz do Sul n=3,345 and Lajeado-Estrela n=2,239. The state capital, Porto Alegre, is a region with a high population density and a large influx of people from around the metropolitan area. In addition, the city is 37.83% non-vegetated (18,740 ha), of which 97.14% are urbanized spaces. As for Gramado-Canela, these cities have an area with high vegetation cover, with Gramado having 75.73% forest cover and Canela 65.61%. However, they are both tourist cities with high altitudes ( $\approx$  830m), which favors the presence of *Aedes aegypti*, the vector of the dengue virus.

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