



Call for Special Issue (2nd Semester): “Geoinformation in Environmental Studies: characterization, mapping, and solutions for Rio de Janeiro’s reality”

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The use of geoinformational data to understand space, although dating back to ancient practices (Castiglione, 2021), has undergone profound transformations in recent decades with technological advances. This process culminated, in the 21st century, in the period known as the Geoinformational Current (Rodriguez, 2015). Thus, we observe not only growth but also the popularization of the spatial dimension in different fields of knowledge.

In this context, beyond traditional mapping, studies on environmental changes increasingly demand detailed temporal data across space and time. This includes, among other factors, the identification of changes in land use and land cover, a fundamental strategy to recognize pressures on natural ecosystems. In the case of cities, such initiatives require products at finer scales, capable of identifying small objects—essential for efficient municipal management.

Cities are composed of multiple elements that give them diverse forms and functions, attributing unique characteristics to their landscapes and identities. Among these elements, urban greenery stands out as an essential component of urban structure, contributing to microclimate regulation: vegetation reduces ambient temperature through shading and evapotranspiration (OKE et al., 2017). Furthermore, green infrastructures provide multiple ecosystem services and reduce socio-environmental vulnerability in the face of climate change and urban problems such as air pollution and flooding (LOCKE and MCPHEARSON, 2018). Because they result from the interaction between natural and human factors (YANG et al., 2014), green spaces have attracted growing attention, especially regarding the development of effective mapping and monitoring techniques.

Vegetation removal significantly alters the local climate, particularly in cities. This process intensifies the formation of urban heat islands, with direct impacts on quality of life. Maps of vegetation cover in urban areas have highlighted inequalities between neighborhoods, especially in poorer regions and favelas. However, the problem goes beyond heat islands: excessive soil sealing reduces its capacity to absorb large volumes of water, increasing the risk of flash floods, inundations, and flooding in urban and peri-urban areas. Added to this is air pollution and its impacts on health, which can contribute to reduced life expectancy, especially among the elderly and more vulnerable populations.

The challenges are multiple, particularly given the pressures imposed by climate change. These issues demand swift solutions to support mitigation and adaptation strategies. In the case of Rio de Janeiro, given its complex socio-environmental reality, it is increasingly urgent to develop robust databases capable of identifying needs and potentialities, guiding planning in a dynamic and constantly changing world.

Thus, this dossier welcomes articles that present methodological and empirical contributions on environmental changes in Rio de Janeiro's landscape, climate impacts and quality of life, monitoring and analysis of extreme events, as well as mapping and characterization of urban greenery and its ecosystem services.

Possible topics of interest include, but are not limited to:

1. Analysis of environmental changes in Rio de Janeiro's landscape
2. Urban green systems and their ecosystem services
3. Climate change impacts and quality of life
4. Monitoring land cover and land use at the municipal scale: realities and strategies
5. Anthropogenic pressures on natural ecosystems
6. Extreme climate events in the city

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