

Spatial distribution of cemeteries in Lithuania

Augustas Reikertas^{a,*}, Neringa Mačiulevičiūtė–Turlienė^b

Institute of Geosciences of Vilnius University, Vilnius, Lithuania

^a *augustas.reikertas@chgf.stud.vu.lt*

^b *neringa.maciuleviciute@gf.vu.lt*

* Corresponding author

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Abstract:

Cemeteries hold a significant place in communities as a cultural and historical phenomenon. Ancient burial sites, explored by archaeologists and historians, reveal that every aspect of burial – from the choice of the location to the adornment of the burial site – was carefully evaluated process. Various burial sites can be found ranging from densely urbanized areas to forests and marshes. Cemeteries are indispensable components in shaping the landscape of Lithuania, capable of conveying the history of the land and the community.

The spatial distribution of cemeteries in Lithuania is a relevant topic that deserves more attention than it currently receives. Cemeteries are studied in various works as a landscape element, archaeological or cultural heritage site, but detailed research on their spatial distribution is scarce. Examining their spatial distribution in the region can reveal various historical and cultural processes related to wars, and religious, or ethnic diffusion peculiarities in the region. Their influence on urban planning and the current landscape is undeniable. Therefore, the examination and further analysis of the spatial distribution of cemeteries is purposeful, as it summarizes all the statistics of Lithuanian cemeteries and creates maps that reveal the spatial distribution of cemeteries. The aim of the study is to analyse the spatial distribution and geospatial peculiarities of the cemeteries in Lithuania.

To evaluate the spatial distribution of Lithuanian cemeteries, a list of all cemeteries was compiled based on the data provided by the municipalities (2005–2023) and the register of immovable cultural heritage sites (1990–2023). The Lithuanian soil spatial dataset was also used to determine the soil characteristics of operational and restricted burial sites.

The main goal of creating cemetery maps of Lithuania is to convey collected data clearly and determine the spatial distribution of cemeteries in Lithuania. The created maps allow for a better understanding not only of the spatial distribution trends but also help to determine the causality of certain indicators based on qualitative and quantitative cemetery information. To achieve this goal, collected data was prepared and analysed with geographic information systems (GIS). Data was represented through choropleth, diagram, dot, and heat map methods which helped better visualize and understand the trends of spatial distribution of cemeteries.

The collected data revealed that the majority of cemeteries by their operating status are non-operational – 5520 cemeteries, including various old graves, Holocaust memorials, war memorials, and abandoned rural graveyards. 2123 cemeteries have an operational status. The least in Lithuania are cemeteries with restricted burial status – 378 cemeteries. 32 cemeteries have not been assigned an operating status by municipal administrations. Together they make up 8053 cemeteries. It was observed that operational cemeteries in Eastern Lithuania constitute a significantly larger portion than in the western part of Lithuania (Figure 1, (B)). It was found that at the municipal level, cemeteries are not evenly distributed (Figure 1, (A)). The largest number of cemeteries per 100 sq. km is recorded in city municipalities and Western Lithuania, while the smallest number is observed in Eastern and Central Lithuania. A clear spatial distribution of confessional cemeteries in Lithuania was observed: Evangelical–Lutheran cemeteries are prevalent in Western Lithuania, Orthodox cemeteries – in Northeast Lithuania, and Jewish confessional cemeteries are evenly distributed throughout Lithuania. The distribution of war memorial cemeteries around the front lines of the First and Second World Wars is being observed. The largest concentration of war casualties' burial sites is recorded in Lithuanian cities. It has also been clarified that in operational and restricted burial cemeteries, sand, loam, and sandy soils prevail according to the soil composition by texture. Also, operational, and restricted burial cemeteries are in flat areas with a predominant surface slope of 2–5%. Further spatial distribution studies of cemeteries could elucidate historical, cultural, or other ongoing processes in Lithuania. This would allow for a better understanding of the significance and place of cemeteries in Lithuanian society, revealing possible historical or cultural connections.

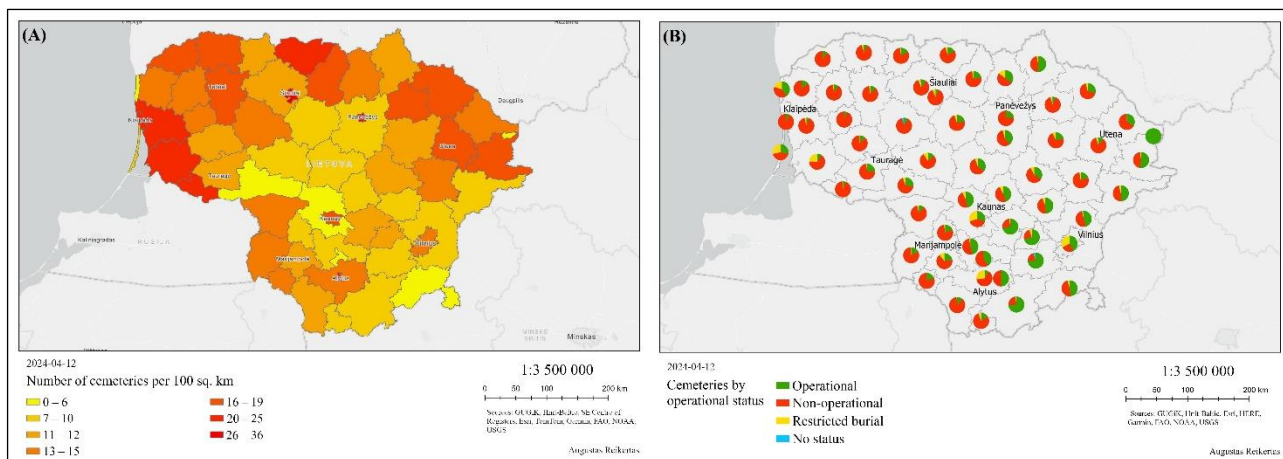


Figure 1. Spatial distribution of Lithuanian cemeteries across municipalities, number of cemeteries per 100 sq. km (A) and distribution of Lithuanian cemeteries by operational status across municipalities (B)