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Streszczenie rozprawy doktorskiej

The doctoral dissertation titled "Settlement Space on the Borders of the Early Piast State in Light of Geoinformatic Analyses: Lubusz Land and Chełmno Land – A Comparative Study" focuses on a multifaceted spatial and environmental analysis of settlements in the northeastern (Chełmno Land) and western (Lubusz Land) border areas of the early Piast state. The aim of the study is to understand how natural and social factors influenced the distribution and organization of settlement structures, contributing to the formation of Polish statehood from the 7th to the 13th century.

The author concentrates on determining the settlement patterns of Chełmno Land and Lubusz Land, considering the natural and social context of these regions as the borders of the early Polish state. Chełmno Land bordered Prussian territories, while Lubusz Land was located in the western Germanic zone of influence, which gave them strategic importance and shaped specific conditions for the development of settlements.

The research methodology is based on geoinformation tools and database analysis. A key element was the analysis of the Digital Terrain Model (DTM), which allows for detailed mapping of terrain topography and facilitates the classification of settlement locations. Additionally, geomorphological, soil, and hydrographic network analyses were conducted to identify areas favorable for settlement and natural barriers. Spatial analyses using Geographic Information Systems (GIS) enabled the comparison of settlement distributions and their relationships with environmental elements.

The scope of the analysis includes both open settlements and those defined by natural and human-made boundaries. Settlements were classified at various scales: individual settlements, clusters, zones, and entire settlement regions. The relationships between settlements, hydrographic networks, and soil typologies were examined, allowing for a better understanding of their significance.

The study demonstrates that the natural environment had a significant impact on settlement processes and the organization of settlement structures. The border locations of Chełmno Land and Lubusz Land required settlers to adapt in specific ways, which were important elements in the development of the early Piast state. Natural conditions such as topography, soil types, and hydrographic networks were crucial in selecting settlement locations and shaping their functions.

The research results emphasize that settlement in these areas was not accidental but resulted from a well-thought-out settlement strategy that considered both environmental potential and the need to establish a settlement base on the borderlands. The distribution of settlements

indicates the existence of an organized social and political structure capable of utilizing the natural environmental conditions.

An interdisciplinary approach combining archaeology and geoinformation allowed the author to comprehensively examine early medieval settlements. The use of geoinformation technologies facilitated spatial analysis and a better understanding of the relationships between the environment and settlement structures. This methodology can serve as a starting point for further research on settlement structures along the Polish border in the Middle Ages.

The dissertation makes a significant contribution to research on early medieval settlements and enhances understanding of how natural and social factors influenced the formation of the early Polish state. It shows that the development of settlements on the borderlands was crucial for the formation of borders and state structure. The dissertation offers valuable insights into the role of the natural environment and social factors in shaping settlements on the borderlands of the early Piast state, marking an important step toward a fuller understanding of the settlement processes that shaped early Polish statehood.

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