

ABSTRACT

Title of dissertation: Diversity and distribution of vascular flora in Sandomierz

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The study presents a list and analysis of all spontaneously occurring vascular plants on the site of Sandomierz. For each permanent element of flora, a map of the distribution in the cartogram units has been drawn up.

According to the physical and geographical division, Sandomierz is located on the border of two geographical regions: the Sandomierz Upland and the Vistula Lowland.

Floristic studies were carried out during 5 growing seasons in 2015-2019. The cartogram method was used according to the ATPOL network. The area of Sandomierz is situated within two squares FE 82 and 92 (10 × 10 km). It was divided into 45 basic research units with a side of 1 km, which corresponds to the maximum number of positions a single species could reach.

The vascular plant flora of Sandomierz consists of 857 native species and permanently established ones of foreign origin. The identified elements of flora represent 108 families and 401 genera. The individual components were analyzed taking into account the frequency of the species, the proportion of mountain species, the directional and geographical flora elements and the life forms. Furthermore, the geographical and historical classifications of flora were provided. In addition, with the cartogram maps, spatial diversity of species richness, values of indicators of anthropogenic changes in the flora and density of species of selected habitat groups in individual research units were presented.

The studied flora includes 33 species subject to legal protection, both strict (16) and partial (17), as well as 148 rare and endangered species on the national and regional scale. They are included in the Polish Red Book of Plants (8), Polish red list of pteridophytes and flowering plants (76), the Red list of vascular plants of the Małopolska Upland (125) and the Red Book of Plants of the Podkarpackie Province (13).

The studies assessed the factors influencing the distribution of plants taking into account the belonging to one of the two geographical regions and the spatial development zone.

Furthermore, botanically valuable areas deserving protection were indicated. On the basis of the distribution of thermophilic indicator plants, the likely extent of the microclimatic phenomenon of the urban heat island was determined. Changes in the flora were also assessed by analyzing the species that were not confirmed during the research and new ones for the city.

Despite the significant degree of transformation of the natural environment characteristic of cities, habitats similar to natural ones have been preserved in Sandomierz. The most valuable of them are xerothermic grasslands and oxbow lakes. Diverse landform, geological structure and the Vistula flowing through the city, are associated with the occurrence of various habitats and have their impact on the species diversity of flora.

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