

DEPENDENCE OF SPECIES DIVERSITY OF URBAN FLORA ON A NUMBER OF FACTORS

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Annotation: *The study of urban floras has generated great interest among researchers. This is due to the accessibility of the research object, the availability of widely accepted methodologies and material processing techniques, as well as the relevance of the issue of changes in biological diversity under the influence of anthropogenic factors.*

Keywords: *species diversity, urban flora, factors, correlation and regression analysis.*

INTRODUCTION

Based on information about the floras of 30 cities in Uzbekistan, the species diversity of urban floras was analyzed in relation to several factors (area, population size, and geographic location). According to the results of the correlation-regression analysis, population density is one of the determining factors. Geographic factors (latitude and longitude) play an important role in the changes in the ratio of native and adventive species.


Literature Review

In an interesting and detailed article by N.G. Ilminskikh [3, p. 60], attention is drawn to the specific features of urban flora research conducted by foreign and local scientists. Foreign researchers are actively exploring the following directions: the historical (chronological) dynamics of flora and vegetation; the qualitative characteristics of urbanization of flora along the gradient axes of "city – village," "large city – small city," "city center – outskirts"; the qualitative characteristics of urbanization of flora in areas with intense introduction of new species, such as railway stations and ports; indicator studies and mapping of vegetation cover; general and applied phytosociological studies; the general issues of synanthropization of vegetation cover, as well as the classification of synanthropic and urban flora; population-genetic studies, and other directions.

Local urban floristics has achieved significant successes and surpassed foreign research in the development of problem areas such as comparative-floristic studies, the study of the ecotopological structure of urban flora, and urban partial floras. Active studies are also being conducted on how the systematic richness of flora changes during urbanization, the determination of boundaries and botanical-geographical limits, urban phytophenology, and other issues.

A large amount of factual material on urban floras, located in various ecological and socio-economic conditions, has been accumulated in local scientific literature.





Unfortunately, this material remains underutilized and is not subjected to systematic analysis.

Urban flora is traditionally understood as the sum of populations of all plant species forming under urbanized conditions, representing one of the types of anthropogenically transformed floras [6]. The specific features of urban floras include:

1. Specific structure: Urbanized areas usually have clearly defined spatial and ecotopological structures, as well as corresponding species complexes. Over the course of historical development, urban floras have experienced spatial differentiation, reflecting the combination of several types of ecotopes in urban areas. This has resulted in the mosaic structure of the vegetation cover, where different ecotopes coexist in urban areas.

2. Contrast in natural-climatic conditions: These differences affect the phytobiota [2]. Another characteristic of urban floras is the enrichment of their taxonomic composition with hybrid forms and an increase in the proportion of teratomorphs.

3. Similarity between urban floras: There is a similarity between urban floras in different natural-climatic zones. In cities of the temperate zone, the weakening of zonal features is evident, mainly as a result of changes toward thermoxeric floras and those formed in extreme conditions. However, urban flora does not become azonal [1].

4. Differences from general urban floras: Some urban floras, particularly in cities with large areas of indigenous vegetation, exhibit a higher number of regional species. Anthropogenic changes in flora are more pronounced in large cities compared to small ones. Consequently, the expression of zonal features in flora is more pronounced in small cities than in large ones.

5. High species richness compared to surrounding areas [4]: This is related not only to foreign species but also to local species, with diversity determined by the ecological heterogeneity of the area and the variety of dispersal routes. Cities serve as centers for the introduction and spread of adventive plants and also act as refuges for some endangered local species [4;5]. Interesting data in the literature suggest that high species richness in cities is due to closely related species adapted to disturbances in the soil-plant cover associated with urbanization. Another reason for high species richness is the density of transportation routes, which facilitates the spread of foreign species both into and out of cities.

6. High proportion of adventive species: Research results show that adventive species play a significant role in shaping plant diversity in several European cities: about half of the species in urban floras are foreign, and half of these are archaeophytes. The increase in the number of adventive species in urban floras occurs through accidental introduction and intentional introduction.



7. High dynamism and lability of species composition: Due to this, different “chronological cuts” of urban floras have very little similarity with each other. Two components should be distinguished in this process: intentional formation of the species composition of flora (modeling) and random, non-directed changes (modification). The dynamic indicators of urban floras depend on the time interval and the degree of anthropogenic impact.

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