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Landscape and Floristic Diversity of Heterogeneous Catchments of Steppe and Forest-Steppe Zones (Altai Krai, Russia)

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The comprehensive studies (since 1995) carried out on the Ob Plateau (the South of Western Siberia) in contemporary zonal and morpholithologic non-uniform catchments, formed in the ancient flow gully, allowed a number of interesting conclusions on the interrelation of landscape and floristic diversity. 1) Elementary floristic and landscape regions (microregion) correspond to each other in space, and their boundaries can be unified, since the differentiation is determined by the same combinations of interrelated environmental factors. 2) Landscape and floristic diversity are interrelated nonlinearly and ambiguously. Their relation may differ at different hierarchical levels, i.e. the greater landscape diversity can show as the larger as the smaller floristic diversity. Only at the elementary topological level (facies – phytocenosis) a linear relationship can be found: the more contrast the facies, the larger the number of their types, the richer the partial flora for each facies type, the higher is the taxonomic and typological diversity of integrated partial floras. 3) The specific landscape units are of different importance for floristic spatial differentiation. Some geosystems have indicative value for a particular state or process and contain differential or indicator plant species, other geosystems are indifferent and do not contain any. 4) Landscape and floristic microregions represent natural operating territorial cells for the assessment and regulation of the environmental impact, the organization of nature protection and management, and landscape planning. The work is supported by the Russian Foundation for Basic Research [grant number 15-05-01760-a].

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