

FEATURES OF THE TRANS-SIBERIAN RAILWAY FLORA FORMATION AND ALIEN PLANT MIGRATION WITHIN DIFFERENT REGIONS

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Biological invasions are now recognized as a major cause of the loss of natural biodiversity and a threat to ecosystem services. Transport corridors are one of the main vectors of invasion both during long-distance plant dispersal and as foci from which unintentionally introduced species spread to the surrounding landscape and beyond. However, large-scale studies of invasion vectors and their role in the formation of modern floras are still insufficient. And we consider the Trans-Siberian Railway, which connects two continents with a different set of native species, to be a unique object of research for analyzing the distribution of alien plants on a global scale.

Inventory of alien and native plants was carried out on the segments of the Trans-Siberian Railway, passing through the territory of the East European Plain, including the Central and the Northern Branch of the Railway were conducted. Some studies were also fulfilled on the railway plots of the Siberian regions (Irkutsk region and Buryatia). We studied 30 railway stations located in six natural biomes. At each site three different ecotopes were studied: on the railroad bed, on slopes and in the railroad embankment. A total of 112 geobotanical descriptions were compiled. 469 species of vascular plants were detected within the territories studied: 57 woody plants, 275 polycarpic herbs and 137 species of monocarpic herbs. Among the species there are 132 invasive plants.

Factor analysis has been carried out to assess the presence of invasive species in various regions along the Trans-Siberian Railway made it possible to visualize differences in the nature of their distribution at different regions and biomes.

In result of our study we revealed a correlation between the characteristics of natural biomes and the main floristic indices. Plant's number in the Trans-Siberian Railway positively correlates with the total number of vascular plant species recorded in the biomes: the highest number of both woody and herbaceous species, and both on the railroad bed and on the slopes, is noted in segments passing through the Smolensk-Privolzhsky biome. In terms of reducing the number of plant species, the ecotopes of the railway located in the following range: slopes of the railway → railroad bed → infiltration ditch. According to the Sorensen's similarity coefficient, the highest similarity is observed between the flora of slopes (53%), similarity of local flora of the railway bed is lower (44%), and very low (20%) similarity of flora is noted for infiltration ditch. Only 2 species are found in all six biomes, all of them being alien invasive species (*Acer negundo*, *Amaranthus retroflexus*) are among the TOP-100 the most dangerous invasive species in Russia. The Trans-Siberian Railway serves both as a recipient of alien species "escaping" from settlements and as a main vector for their further dispersal along the transport corridor.

This work was supported by project no. 20-10349J (Czech Science Foundation) and by RFBR and CSF according to the research project no.19-54-26010.