

FROM WEST TO EAST AND BACK AGAIN: TRANS-SIBERIAN RAILWAY AS A CONTINENTAL PATHWAY OF PLANT INVASIONS; PROJECT OVERVIEW

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The project "From West to East and back again: Trans-Siberian Railway as a continental pathway of plant invasions" focuses on analyzing the role of human-mediated pathways. It uses the Trans-Siberian railway (Транссибирская магистраль, Transsibirskaya magistral, TSR) as the model system, and is based on studying floras at individual TSR stops. The railway, which spans across much of Eurasia, provides a unique opportunity for analyzing the spread of alien plants at a continental scale. It connects two continents differing in their native species pools, and because more than 50% of foreign trade and transit cargo in Russia is transported via the TSR, its role in the unintentional movement of plant species is crucial. Because TSR is so isolated, there is little interaction with other traffic networks in contrast to e.g. Europe, where it is nearly impossible to disentangle the influence of road and railway networks on species introductions. We aim at studying the transported plant species and biogeographical patterns of their spread. The project also aims to predict the invasion risk of alien species along TSR in the future.

Within the project, we will combine (i) field inventories of alien and native plants along the TSR corridor, (ii) laboratory experiments aimed at the identification of plant species' reproductive and dispersal traits, and (iii) analysis of socioeconomic vectors and biogeographical drivers associated with alien species dispersal. The project will thus contribute to understanding the role of human-mediated pathways (based on the model system of TSR) in transporting plant species, elucidating the biogeographical patterns of their spread, and predicting the invasion risk of alien species spreading along TSR in the future. Lastly, this study will improve the knowledge about alien plant species in temperate Asia.

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