



Time-scale modelling of the invasive species *Robinia pseudoacacia*

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Abstract

Our contribution is part of the TransEcoNet project (Transnational Ecological Networks in Central Europe) that aims to investigate transboundary ecological networks across Central Europe. An objective of this project is to contribute towards awareness rising on the value and role of ecological networks. This poster presents the activities that are carried out in Pomurje region, Slovenia as our case study area. Pomurje region borders with Austria in the north, to Hungary in the east, and to Croatia in the south.

We are investigating the spread of the invasive species *Robinia pseudacacia* and the underlying causes, and assess landscape scale ecological dynamics (e.g. Mura River floodplains) in ecological networks. The study comprises investigation and mapping of the *R. pseudacacia* spread with time-series analysis to understand its spatial dynamics.

The preliminary studies show that the *R. pseudacacia* had the most expanded in the region since 1980s. Some of the surfaces were cut and converted back to fields. This reflects the socioeconomic situation in the region. The further study will include statistic, GIS (geographical information systems) and remote sensing techniques. We will apply various character data: satellite imagery, IR-orthophotos, digital elevation models, including LIDAR, contemporary and historical maps, and other spatial/non-spatial data sources. The outputs will include reconstruction of *R. pseudacacia*-dynamics in the recent decade, modelling the distribution of *R. pseudacacia* in relation to abiotic environmental factors and land use, and modelling (prediction) the expected distribution of *R. pseudacacia* in case of climate and land use change.

Keywords: invasive species, *Robinia pseudacacia*, spatial analysis, time-scale analysis, remote sensing, land use change, climate change