DISTRIBUTION OF FLOODPLAIN FOREST DATA IN THE DATABASES AND THEIR USEFULNESS FOR THIS RESEARCH

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cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

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History

- Extremely increasing number of phytosociological, ecological and taxonomical data and entries needs to be stored properly with a possibility for further processing.
- Data banking activities of European phytosociologists and botanists within the initiative of the „European Vegetation Survey“ (Rodwell et al. 1995) led in 1990s to the inception of the database programme Turboveg (Hennekens 1995), which with its new version for Windows – Turboveg for Windows (Turbowin) became an oficial management system for input, storage and further processing of phytosociological relevés in more than 30 countries all around the world (Hennekens & Schaminée 2001).

http://www.synbiosys.alterra.nl/turboveg/

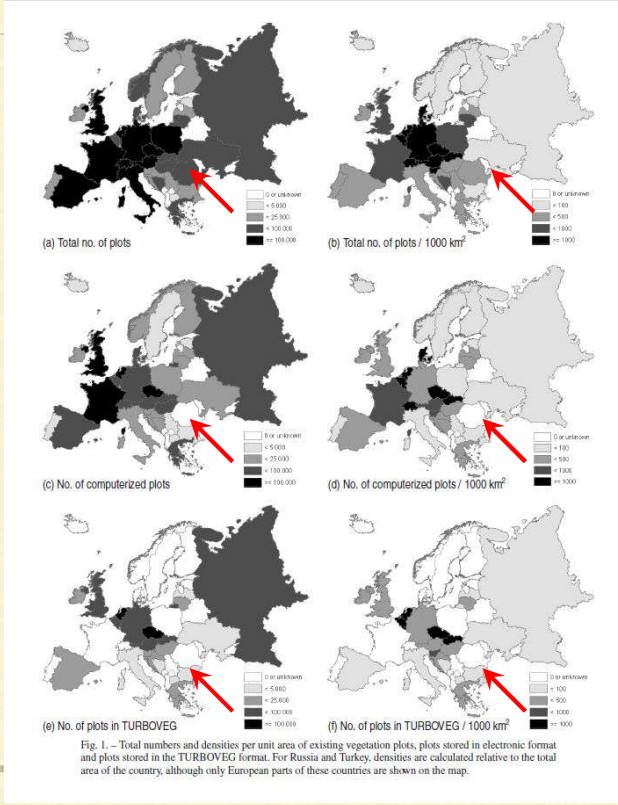
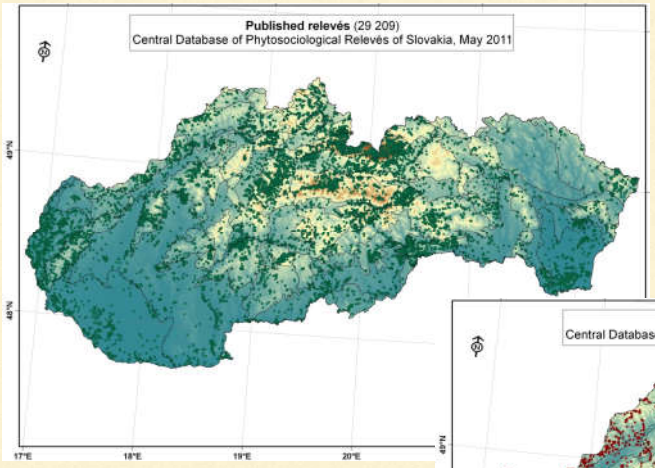


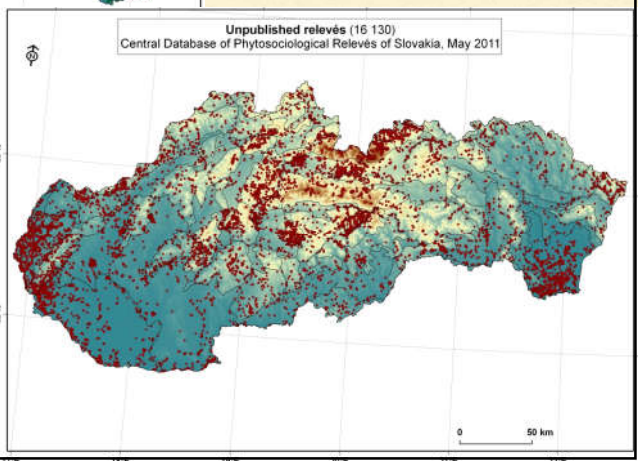
Fig. 1. – Total numbers and densities per unit area of existing vegetation plots, plots stored in electronic format and plots stored in the TURBOVEG format. For Russia and Turkey, densities are calculated relative to the total area of the country, although only European parts of these countries are shown on the map.

Number of phytosociological relevés in Europe

Schaminée, J.H.J., Hennekens, S.M., Chytrý, M. & Rodwell, J.S. 2009. Vegetation-plot data and databases in Europe: an overview. Preslia 81: 173-185.

Localities of phytosociological relevés in Slovakia





- The only data with geographical coordinates are presented

Floodplain forest data in Slovak database

ALLUVIAL FORESTS AND SCRUB
Alno glutinosae-Populetea albae P. Fukarek et Fabijanic 1968 – 1116 rel.
Salicetea purpureae Moor 1958 – 574

SWAMP FORESTS AND SCRUB
Alnetea glutinosae Br.-Bl. et Tx. ex Westhoff et al. 1946 – 615 rel.
Franguletea Doing ex Westhoff in Westhoff et Den Held 1969 – 19 rel.

FRESHWATER AQUATIC VEGETATION
Lemnetea O. de Bolos et Masclans 1955 – 260 rel.
Potamogetonetea Klika in Klika et Novak 1941 – 481 rel.

VEGETATION OF FRESHWATER SPRINGS, SHORELINES AND SWAMPS
Montio-Cardaminetea Br.-Bl. et Tx. ex Klika et Hadac 1944 – 614 rel.
Littorelletea uniflorae Br.-Bl. et Tx. ex Westhoff et al. 1946 – 20 rel.
Isoeto-Nanojuncetea Br.-Bl. et Tx. in Br.-Bl. et al. 1952 – 156 rel.
Phragmito-Magnocaricetea Klika in Klika et Novak 1941 – 2759 rel.

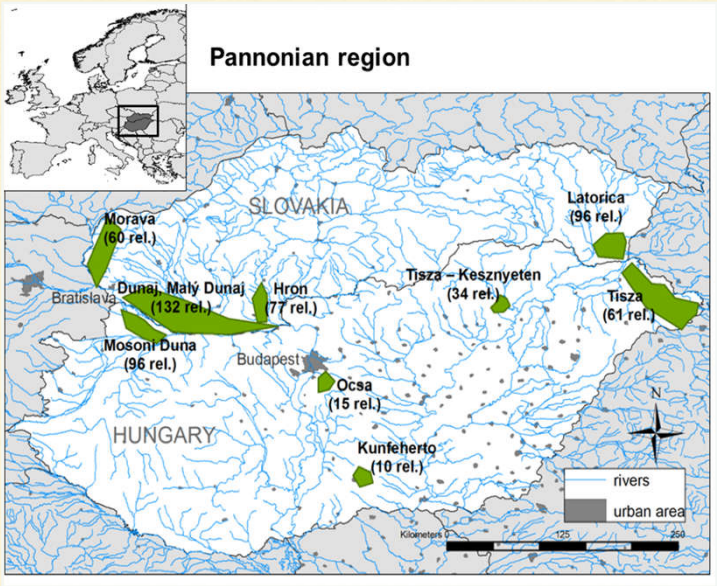
Possible utilization of vegetation database

- Phytosociology – vegetation overviews, chorological studies, supra-regional synthesis, spatial and temporal changes of vegetation
- Ecology – analyses of various environmental variables in relation with localization of individual relevés
- Geography – GIS analyses on the level of e.g., Corine landcover units
- Taxonomy – distribution and ecology of individual taxa
- Nature Conservation – biotopes mapping, distribution of individual taxa and vegetation types

ASSESMENT OF CONDITIONS OF FLOODPLAIN FORESTS

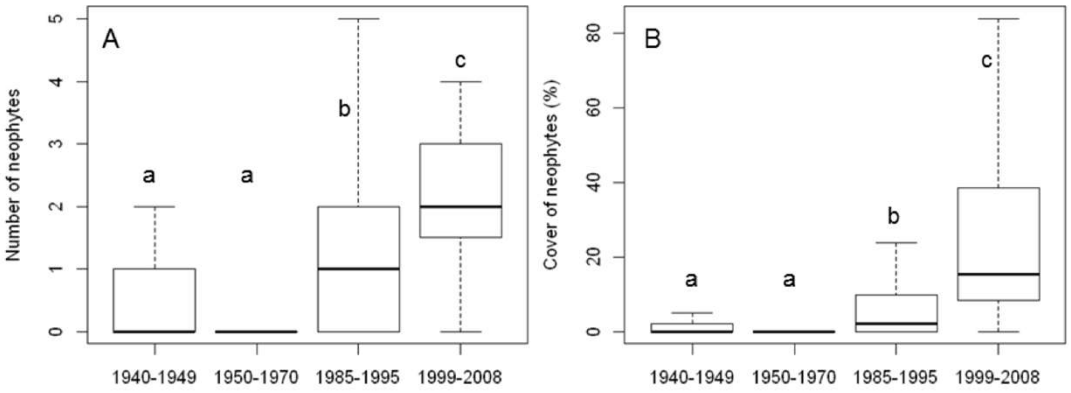
- Level of invasion and native species occurence - a good sign of floodplain forest conditions
- Well sampled ecosystems in Slovak and Hungarian databases
- Available data from old syntaxonomical surveys - comparison of different time periods is possible
- Hardwood floodplain forests of Pannonian region
- Softwood floodplain forests of Danube inland delta

NEOPHYTES IS PANNONIAN HARDWOOD FLOODPLAIN FORESTS



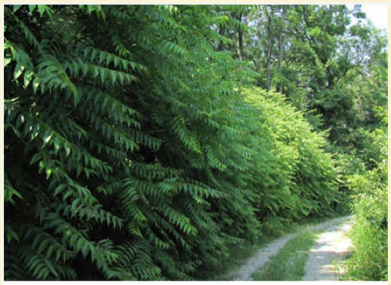
- Study based on the dataset of 577 relevés ordered within the suballiance *Ulmenion* in the Slovak and Hungarian databases
- Neophytes were identified according to the Slovak and Hungarian lists of non-native species.

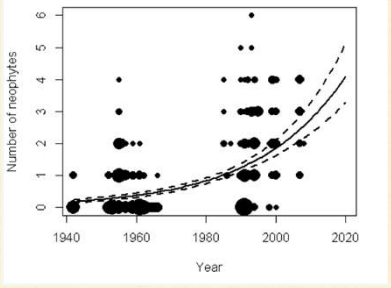
RESULTS

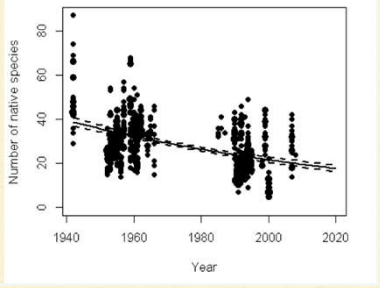


- Number and cover of neophytes in Pannonian hardwood floodplain forests from 1940 to present time (Kruskal-Wallis test)

RESULTS

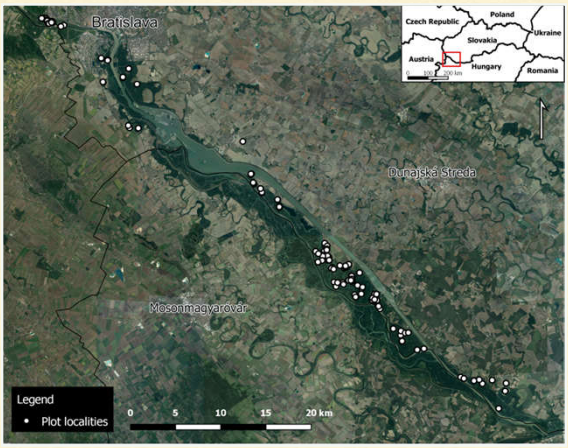






- Increasing number and cover of neophytes
- Decreasing number of native species (tested using GLM model)

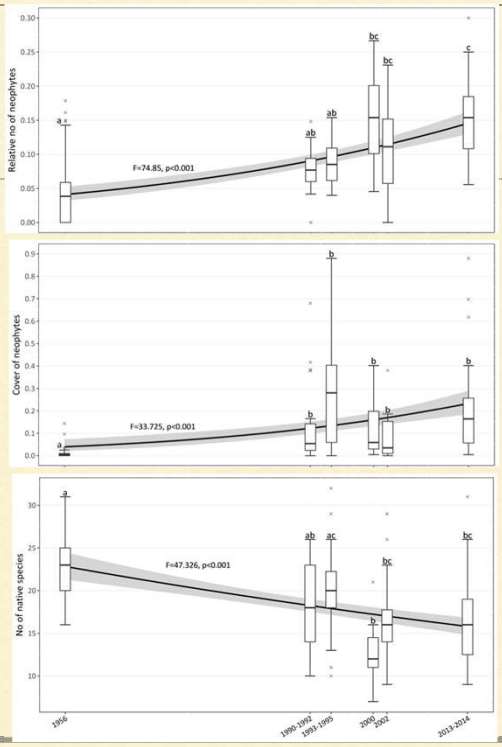
NEOPHYTES IS SOFTWOOD FLOODPLAIN FORESTS OF DANUBE INLAND DELTA



- 177 relevés from Slovak national database and own field sampling
- Level of invasion and number of native species
- From 1950 to present time

RESULTS

- Number and cover of neophytes in willow-poplar floodplain forests of Danube inland delta is increasing
- Number of native species is decreasing (tested using Kruskal-Wallis test and GLM)




Thank you for your attention