

Invasion of alien plants in the sand vegetation of Kiskunság

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The mosaic of open sandy grasslands and poplar-juniper thickets – the focal habitat of the KISKUN LTER – is the second most invaded habitat (after the riverine shrublands and woodlands) in Hungary according to the MÉTA-database (Figure 1). The most dangerous invasive species in this habitat are *Robinia pseudo-acacia*, *Asclepias syriaca*, *Solidago gigantea*, *S. canadensis*, *Ailanthus altissima*, and *Elaeagnus angustifolia* (Figure 2).

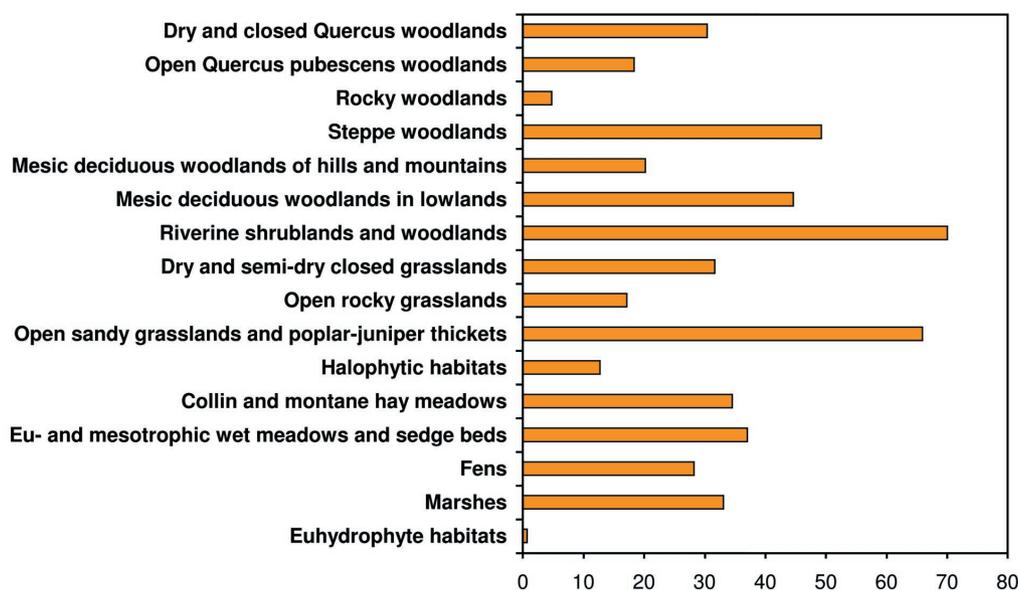


Figure 1. Area threatened by invasion in the different habitats in Hungary according to the MÉTA-database (see short description in Ecological Databases).

Differences in vegetation of landscapes dominated by plantations, agricultural lands, and natural communities were surveyed in the Kiskunság Region in the frame of the project “Interactions between natural and human-dominated ecosystems: biodiversity, ecosystem functions and land use in the Great Hungarian Plain”. Influences of habitat type and land use on the degree of alien plant invasion were studied by investigating three 400 m² plots for each habitat type within fifteen 25 km² sites. 2 herbaceous and 5 woody invasive species of high frequencies and invasiveness were chosen for the analyses.

Reclamation of natural grasslands increases invasion success of both herbaceous species investigated (Figure 3). *Ambrosia artemisiifolia* demands continuous cultivation while *Asclepias syriaca* requires abandonment following an initial disturbance.

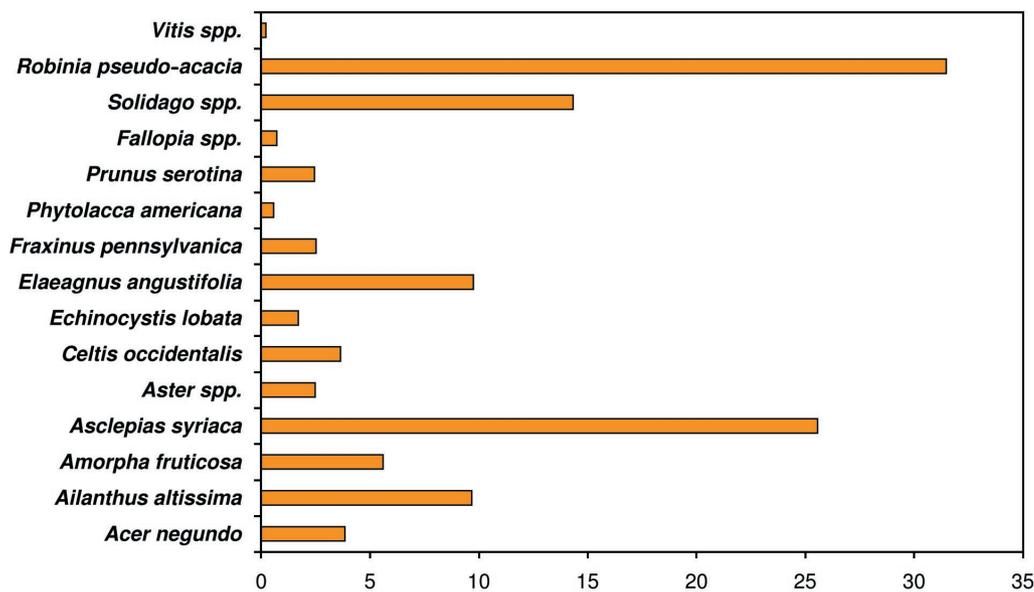


Figure 2. Distribution of 15 invasive plant species in the open sand grassland and juniper-poplar thickets based on the data of the MÉTA-database. (The same place can be invaded by more than one species, thus the sum of the values can be higher than the total invaded area in the previous figure.)

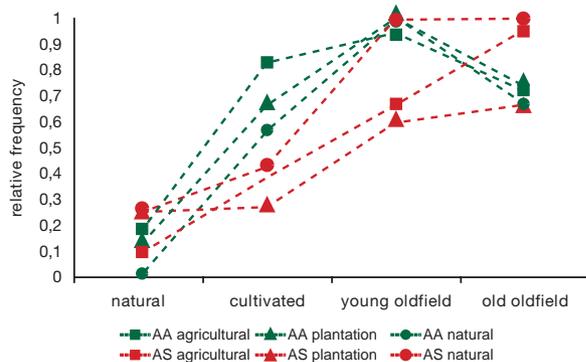


Figure 3. Relative frequencies of two invasive species *Ambrosia artemisiifolia* (AA) and *Asclepias syriaca* (AS) in four habitat types in different landscape types (young oldfield: abandoned 1–5 years ago, old oldfield: abandoned more than 6 years ago). Habitat types represent a sequence of land use change common in rural landscapes.

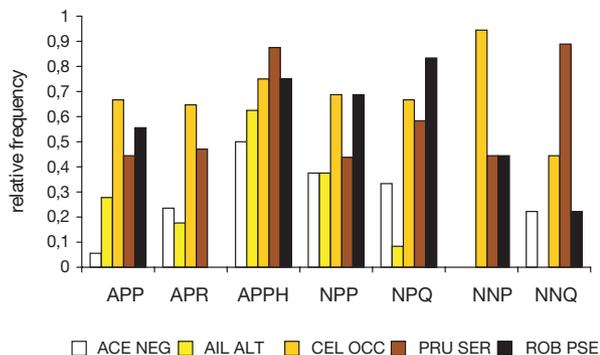


Figure 4. Relative frequencies of invasive tree species in natural and human-managed woody habitats. APP: alien *Pinus* plantation, APR: alien *Robinia* plantation, APPH: alien *Populus* plantation, NPP: native *Populus* plantation, NPQ: native *Quercus* plantation, NNP: natural native *Populus* forest, NNQ: natural native *Quercus* forest.

Invasibility of natural habitats was lower than intensively-managed woody habitats (Figure 4).

References

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