

Artificial ponds in Central Europe do not fall behind the natural ponds in terms of macrophyte diversity



We studied macrophyte composition and 24 environmental variables in 69 ponds of both natural and artificial origin in Slovakia. We tested differences in α and γ diversity and β similarity between natural and artificial ponds for helophytes, hydrophytes, red list species and all species. We also assessed effects of environmental variables on species richness of studied ponds by generalised linear models (GLM). For local diversity, the significant difference was obtained only in case of helophytes. Beta similarity significantly differed for all the species groups. Total species numbers (gamma diversity) of all the groups were higher in natural ponds with the exception of hydrophytes. A randomization test of γ diversity yielded significant differences for helophytes and all species groups; richness and diversity of hydrophytes and red list species were not significantly different. Thus, we can conclude that even though natural ponds have a significantly higher regional diversity, local diversity is comparable not only for common species but also endangered red-listed macrophytes and thus artificial ponds could serve as proper secondary habitats for macrophytes. GLM

showed different effect of environmental predictors on richness of studied species and pond groups and a slightly higher explained variability in natural (40%) compared to artificial (37%) ponds.

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