



INTERNATIONAL  
BIOGEOGRAPHY  
SOCIETY  
11th Biennial Conference

# 11th Biennial Conference **PRAGUE, CZECHIA**



**POCKET PROGRAM**  
January 7- 11, 2024



INTERNATIONAL  
**BIOGEOGRAPHY**  
SOCIETY

ORGANIZED BY:

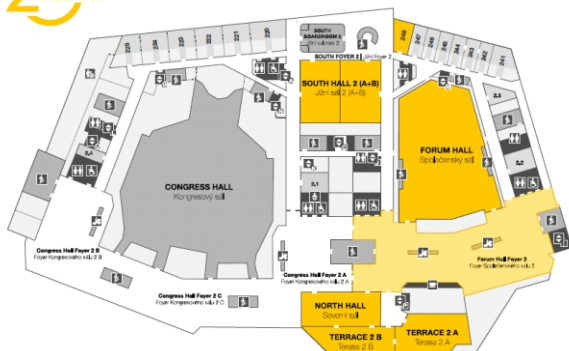


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- Tereza Jezkova
- Seda Akkurt Gumus

2022-2024

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The question of how alien plant species are integrated into local communities and what makes them invasive has been one of the central topics since the beginning of invasion ecology. Here, we address this question by analyzing functional trait differences between native and alien species in 12,460 invaded vegetation plots recorded in six different habitat types in the Czech Republic. We asked whether alien species integrate into the center or periphery of the trait space of each community (vegetation plot) and whether the observed pattern is consistent across habitat types. When we considered each trait separately, differences between native and alien species (either non-invasive naturalized or invasive) were very small and mostly statistically insignificant. We also did not find consistent differences across habitat types. In contrast, when we measured the distance from the center of the trait space of native community in each vegetation plot, we found that native species were significantly clustered around this center, while alien species (both naturalized and invasive) were distributed farther away in most vegetation plots across all habitat types. However, the distribution of alien species was statistically indistinguishable from the simulated (randomly assembled) communities. The alien species were thus not different from being randomly selected from the habitat species pools and inserted into the local communities. This suggests a weak effect of assembly rules and environmental filtering on alien species which makes them distributed at the edge of the trait space in local plant communities.

## **252. Marsh frog invasions in Western Europe: multiple biogeographical origins, opportunism and effects on native pond communities**

**Mathieu Denoël<sup>1</sup>**, Fabien Pille<sup>2</sup>, Daniel Jablonski<sup>3</sup>, Christophe Dufresnes<sup>4</sup>

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Whereas some biological invasions are well documented, others, more cryptic, are often underestimated. This is the case of marsh frogs (*Pelophylax ridibundus*) which have been released into the wild as part as the frog leg and captive breeding industry. Despite being one of the most studied frog in Europe, there is still a lack of an integrative overview of its invasion patterns and risks to biodiversity. To fill this gap, we carried out an inter-disciplinary study in phylogenetics, spatial and trophic ecology. By genotyping hundreds of populations in the Palearctic, we found out that more than 10 lineages, originating from three continents, were found in invaded areas. Interestingly, these invasions pathways fit well with the history of importations of live frogs in Western Europe. The introductions gave rise to nation-wide invasions, facilitated by the wide ecological opportunism of the invaders. This resulted in large niche overlaps with native amphibians which use similar aquatic environments. Diet analyses across multiple ponds showed a high trophic opportunism of marsh frogs, which were able to forage on most native amphibians but also on many invertebrate taxa and threatening some emblematic species. Altogether, these results rank the marsh frogs as one of the most invasive amphibian species in the world and call for research to highlight the complexity of patterns and effects from the different lineages as well as for a limitation of risks due to the international trade.