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Conference Abstract

Are the Natura 2000 habitats with the highest number of invasive alien plant species also the most threatened?

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Abstract

The comprehensive list of non-native plants in Poland was published 14 years ago (Tokarska-Guzik et al. 2012). Due to rapid changes in non-native flora this list has now been revised and updated. In the current study particular attention has been paid to the occurrence of invasive alien plant species (IAPS) within Natura 2000 habitats. We focused on the number of IAPS identified within individual habitat types and the impact category of these species according to the *Environmental Impact Classification for Alien Taxa* - EICAT (IUCN Species Survival Commission (SSC) 2020). The threat category of individual habitats was adopted from the *Red List of Natura 2000 Habitats of Poland* (Korzeniak et al. 2025), where habitats were assessed according to the IUCN criteria (IUCN Standards and Petitions Committee 2024).

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We identified 83 taxa invasive at both – the national and regional levels, occurring across 53 Natura 2000 habitat types, including 21 in the EN (endangered) category, 12 in VU (vulnerable), and 10 in CR (critically endangered). The highest number of IAPS was recorded in *Hydrophilous tall herb fringe communities* – 6430 (DD - data deficient) and *Lowland hay meadows* – 6510 (VU) – with 30 and 28 species, respectively. The other habitats with 10 or more IAPS recorded within them include species-rich meadows, fringe communities and riparian forests. Some of them belong to the group of priority habitat, e.g.: *Xeric sand calcareous grasslands* – 6120* (DD), *Rupicolous calcareous or basophilic grasslands* – 6210* (EN), and *Alluvial forests* – 91E0* (VU).

Considering the species impact categories according to the EICAT classification assigned to the analysed IAPS, two groups of species are predominant – the MI (minor) and MO (moderate) categories. The next largest groups consist of species in the MR (major) and the MA (massive) category. The smallest group of IAPS consists of species in the category ML (minimal concern).

An analysis of the proportion of IAPS with varying impacts within habitat groups of the same threat category (using a generalized linear model for discrete variables (negative binomial)), showed statistically significant differences between habitats of the CR and DD categories, whereas the remaining categories did not differ from one another. Considering the IAPS with the highest impact categories (massive - MA and major - MR), a similar trend was observed – their lowest number was recorded in the habitats of CR category and the highest – in habitats classified as EN and DD.

Our results indicate that in case of the most threatened Natura 2000 habitats in the CR category (primarily salt marshes and peatlands) IAPS are not very numerous. Main factors that threaten those habitats are deteriorating hydrological conditions, changes in nutrient composition, acidification or salinization stress, or a combination of these factors. In contrast, the highest number of IAPS has been recorded in habitats classified as EN or Data Deficient (DD). This suggests that when prioritizing measures to conserve species diversity in natural habitats, special attention should be focused not only on habitats with the highest threat categories but also on those with lower status, given the pressure exerted by large number of IAPS.

Keywords

EICAT classification, impact categories, natural habitats, threat categories

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Conflicts of interest

The authors have declared that no competing interests exist.

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