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Conference Abstract

Spatio-temporal impact prioritization of IAS on European threatened species

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Abstract

Invasive alien species (IAS) are a major driver of biodiversity loss. Reducing their impacts is a global priority, as recognized by the Global Biodiversity Framework and the EU Biodiversity Strategy. A priority of the EU Biodiversity Strategy is to reduce by 50% the number of IUCN Red List native species threatened by IAS by 2030. To achieve and track progress towards this goal, we need to understand the current and future distributions of both sets of species (the native threatened and the invasive aliens negatively impacting them).

To do so, we deployed a semi-automated Species Distribution Modeling (SDM) workflow tailored to native species, as well as to invasives. The SDMs were customized to account for the uneven availability of spatial occurrence information of the species, especially in the case of rare threatened native ones. The workflow employs the FAIR principles to generate maps of current and potential distributions for both native species and IAS under climate and land-use change scenarios. We analyze species richness patterns and identify European-scale hotspots and coldspots for native species threatened by IAS, for IAS themselves, and for their spatial overlap.

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Leveraging IUCN Red List threat coding, we outline a pathway to translate threat assessment information into quantitative inputs (e.g., IAS-specific pressure layers). Coupling these data with maps of potential distribution will enable spatially explicit assessments of current and future IAS impacts on native threatened species. These impact maps will underpin spatio-temporal prioritization to inform prevention and management (e.g., areas of high cumulative IAS pressure) and conservation (e.g., candidate refugia where IAS are not projected to occur and could support native species *in-situ* conservation actions).

Keywords

Invasive Alien Species, Eurpe, Prioritization, Red List, Threatened Native Species

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Conflicts of interest

The authors have declared that no competing interests exist.