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Submitted Abstract

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Abstract

Over a thousand non-native species have become naturalized in alpine habitats worldwide, and their spread may pose a threat to these vital ecosystems. However, little is known about the impacts of the presence of these invasive species on the native biota, particularly on aspects directly related with ecosystem functioning. In this study we assessed if the presence of non-native species affects the functional spectrum of plant communities at different elevations in the central Chilean Andes. We sampled vegetation patches dominated by the non-natives and patches dominated by native species at different elevations between 2000 and 3600 m a.s.l. We measured a series of functional traits related to reproduction (seed size, flower color) and growth (size, SLA, N leaf content, C/N leaf ratio) as well as indicators of nutrient cycling in soils.

In general, functional diversity indices indicated that patches dominated by the non-natives did not differ from patches dominated by natives, although at lower elevations there was a trend for decreased functional diversity in the non-natives patches. In contrast, assessments of total functional volume indicated that, regardless of elevation, patches dominated by non-natives had a bigger functional volume than native patches. Thus, non-native species contain different functional traits compared to natives. However, indicators of ecosystem functioning showed no effects of the presence of non-native species. Thus, a complex network of site-specific responses and effects were observed, opening questions about the real impact of non-native species on the native vegetation and how this can vary in the future.

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