Impacts of non-native species in the functional spectrum of alpine plant communities in the central Chilean Andes

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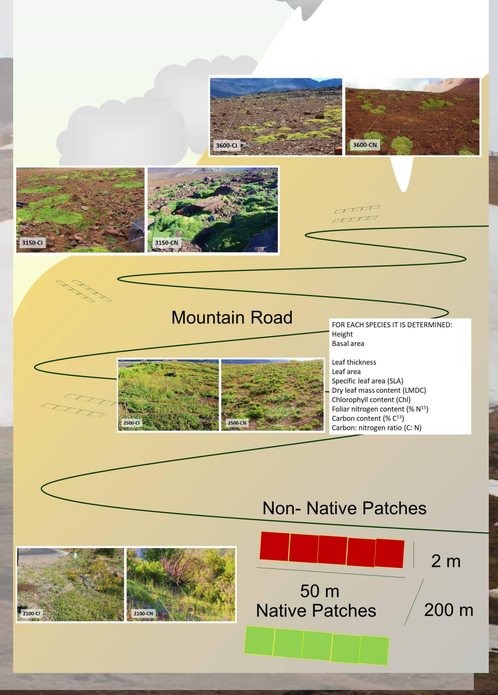
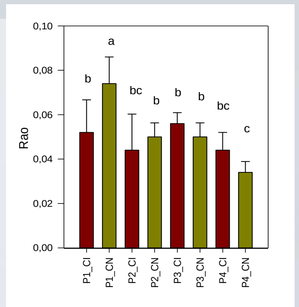
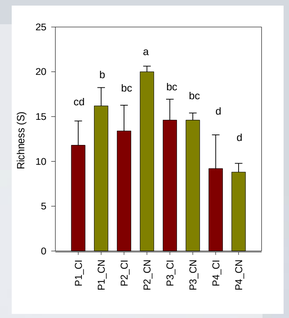
Over a thousand non-native species have become naturalized in alpine habitats worldwide, and their spread may pose a threat to these vital ecosystems. However, little is known about the impacts of these invasive species on the native biota, particularly on aspect directly related with ecosystem functioning.

We assessed whether the presence of non-native species affected the functional spectrum of plant communities at different elevations between 2500 and 3600 m a.s.l in the central Chilean Andes.

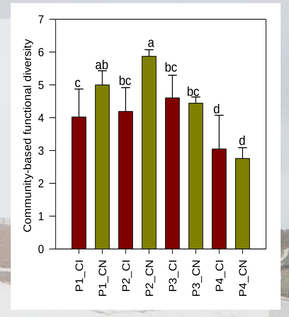
We sampled vegetation patches dominated by non-native species and patches dominated by native species, where we measured functional traits related to growth:



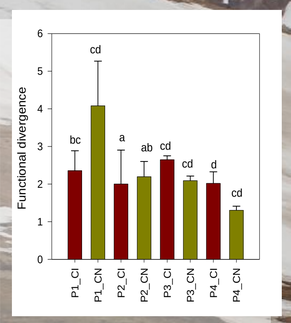


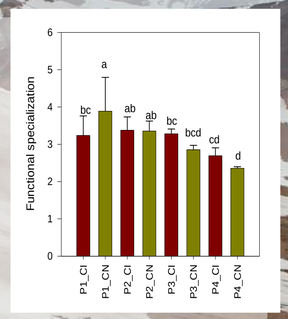


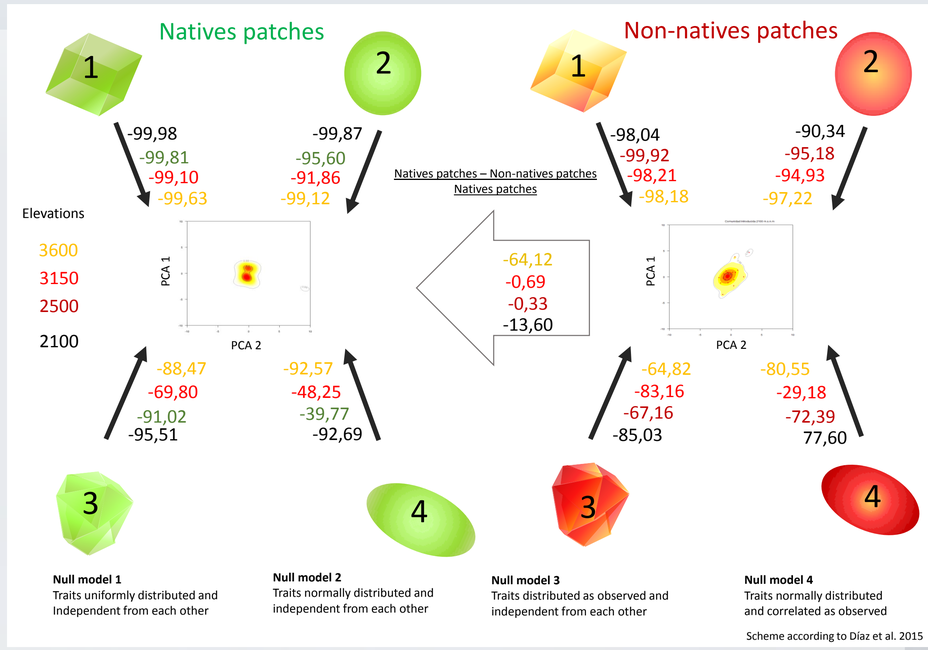
Native patches
Non-native patches



Functional diversity indices indicated that, in general, patches dominated by the non-natives did not differ from patches dominated by natives except at the lowest elevation.







In contrast, assessments of total functional volumes indicated that, regardless elevation, patches dominated by non-natives had a bigger functional volume than native patches. Nonetheless, these differences were higher at the extremes of the elevational gradient.

Non-native species changed the functional traits space compared to that of natives, thus non-native species are having an impact on the native communities.

Site-specific effects were observed, although changes seems to be more important at the extremes of the elevational gradient. Further research is needed to anticipate the impact of non-native species on the native vegetation of the central Chilean Andes

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