



## **Effect of fragment area and isolation on plant species distribution patterns in trampled foredunes (northwest coast of Portugal)**

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Human trampling effects associated with recreational use of sandy coasts are amongst the major causes of foredune systems world-wide degradation. One key issue in habitat conservation strategies is “*to understand and to predict the distributions and persistence of plant or animal species in modern, fragmented landscapes*” (BASTIN & THOMAS, 1999, p.493). In this presentation, the presence and absence of 13 plant species were analyzed in 51 habitat fragments ranging from 20 to 245m<sup>2</sup> in three foredune-sites, in Vila Nova de Gaia (Oporto), Northwest Atlantic coast of Portugal. Multivariate logistic regressions were used to assess the effects of patch area, patch isolation and patch habitat type on each species distribution pattern.

Patch isolation was quantified by a set of 3 different metrics calculated with FRAGSTATS software (McGarigal *et al.*, 2002), namely Euclidean Nearest Neighbor (ENN), Proximity Index (PROX) and Similarity Index (SIMI). We, thus, further tested if more complex indices of patch isolation than ENN improved or alter the results in some way. Patches were classified into foredune habitat types, according to their topographical situation, namely seaside slope, crest, and leese side slope.

Results revealed that patch area play a fundamental role in plant species occurrence in fragmented foredune habitats by trampling. We also found that the importance of patch isolation and patch habitat type varied with the species life history.

## References

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