

**University of South Bohemia
Faculty of Science**



**Size of protected areas is the main
determinant of species diversity in orchids**

RNDr. Thesis

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Annotation

In this thesis I investigated the various factors that might determine species diversity, using orchids as a model group. Area, energy available and latitude are thought to be the most important determinants of species richness.

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Declaration – Prohlášení

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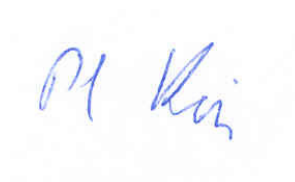
Author's contribution

Iva Schödelbauerová was responsible for most of the data processing as well as for writing of the manuscript.

Dr. David Roberts

A handwritten signature in black ink, appearing to be 'DR Roberts', written over a light grey rectangular background.

Prof. RNDr. Pavel Kindlmann, DrSc.

A handwritten signature in blue ink, appearing to be 'P Kindlmann', written over a light grey rectangular background.

Iva Schödelbauerová^a, David Roberts^{b,c} and Pavel Kindlmann^{a,d} (2009). Size of protected areas is the main determinant of species diversity in orchids. *Biological Conservation*, doi:10.1016/j.biocon.2009.05.015

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Abstract

Efficient allocation of conservation resources will be achieved only if the priorities for biodiversity conservation – the “hotspots” – are correctly defined. To achieve this we need to pinpoint the main determinants of species diversity. Area, energy available and latitude are thought to be the most important determinants of species richness. Area is clearly the most important, but the relative importance of the other two is uncertain. To test the relative importance of energy available and latitude, data on the species richness of orchids was collected for various countries in the world, the influence of area factored out and the residuals correlated with energy available at these countries and with latitude. This was performed for both total area and that of the protected areas for the 67 countries from five continents, in order to determine which gives a better prediction. We show that – at the large scale considered – area is always very important, latitude is more important than energy available and the size of the protected areas gives a better fit than the total area of the country in most cases. This implies that conservation efforts should be directed to maximizing the size of the protected areas in each country.

Keywords NDVI, Orchidaceae, protected area, species-area, species richness.