

## **Abstract**

Latitudinal gradient of diversity is typically being explained by the three main hypotheses: The Resources Limitation Hypothesis, The Speciation Rate Hypothesis and The Niche Conservatism Hypothesis. In my study I tested basic assumptions of these hypotheses using native and non-native vascular plants obtained from the new database GloNAF (Global Naturalized Alien Flora). I tested an effect of precipitation, NPP, temperature and historical velocity (difference in temperature and precipitation between the Last Glacial Maximum and present) on species richness. Given that the distribution of non-native species is among continents irregular (we can divide them into two groups – Australia with Europe and North America and South America with Africa and Asia), I tested the abovementioned relationships at both – global and continental scale. Species richness of native species increased with NPP, precipitation and temperature and decreased with the difference in temperature. The global distribution of non-native plants increased with precipitation and temperature velocity and decreases with temperature and precipitation velocity, although the results varied for particular continents. Unlike other studies the number of non-native species didn't correlate with the number of native plant species. Concurrently it seems that occurrence of non-native species is influenced by other factors than native species and doesn't follow LGD.

## **Key words**

Latitudinal gradient of diversity, vascular plants, native species, non-native species, productivity, energy, history.