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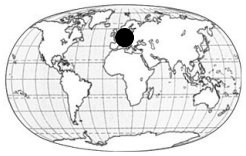

SCALE DEPENDENT RELATIONSHIP BETWEEN INVASIBILITY AND SPECIES RICHNESS OF FUNCTIONAL GROUPS IN SANDY OLD-FIELD COMMUNITIES

According to Elton's classical hypothesis, there is a negative correlation between species richness and invasibility. Its possible explanation is the better resource utilisation of species rich communities. This hypothesis has been tested by lot of researches, but the results are ambiguous and strongly depend on scale and approach (i.e. survey or experiment). Different scales can mean different plot size and different size of studied area (and consequently different heterogeneity). These two aspects of scale often change in parallel. In our case the plot size was constant (1 by 1 m), and only the other aspects of the scale was changed. Data collected from 1, 5, 10, and 30 years old, sandy old-fields, and they analysed together and separately by age. Since former studies pointed out that resource utilisation influenced by the functional types, we studied the correlation between invasibility and richness of certain functional types, instead of the correlation between total native species richness and invasibility. Three alien species occur in the studied area: *Ambrosia artemisiifolia*, *Asclepias syriaca*, and *Erigeron canadensis*. They belong to different life forms, therefore we hypothesised that they use different resources and compete with different functional types. That is why three species were analysed separately. Similarly to the previous studies, we received strong scale dependence of results. If age groups were analysed separately only few significant correlation were found, but if all data involved to the same analysis many significant relationships were revealed. *Ambrosia* and *Erigeron* belong to the functional group of summer annuals. As excepted, they negatively correlate most of the functional groups, except winter annuals, which use resources in other part of the year. On the other hand, *Asclepias* positively correlates with the species richness of perennial functional types.

keywords: old field, succession, invasibility