

Abstract

Relationships between different groups of organisms are one of the major factors shaping Earth's ecosystems. This thesis analyses correlations in species composition and species richness at different spatial scales. Knowledge of these so-called cross-taxon congruences are crucial for proper nature conservation and management of species-rich localities of non-forest habitats. One of the main aims of the thesis was to find suitable surrogate groups for biodiversity conservation in non-forest habitats. Invertebrates and vascular plants are generally good surrogate groups for biodiversity conservation. For example, ground beetles seem to have good correlations in species richness at large spatial scales. However, their importance deeply declines at small spatial scales. At both scales, the species richness of ants and butterflies positively correlates with general species richness. Vertebrates, on the other hand, appear to be a bad surrogate taxon, except for birds which can be placed into a shopping basket with invertebrates and plants. At small scales, species composition differs with the type of agricultural use at studied localities. Umbrella species can be selected from these specific species communities. Best umbrella species for non-forest habitats are invertebrate herbivores such as butterflies or orthopterans, which are habitat specialists. Defining such surrogate and umbrella species can help us to select suitable management of localities.

Keywords: Cross-taxon congruence, species richness, species composition, non-forest habitats