

Effects of local climate, landscape structure and habitat quality on leafhopper assemblages of acidic grasslands

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Grassland biodiversity is severely threatened by recent land-use change. Agricultural intensification on the one hand, and cessation of traditional land use on the other, have caused habitat loss, fragmentation and often a deterioration in habitat quality of the remaining habitat fragments. However, knowledge about the different environmental effects on species richness is still limited, in particular for under-sampled groups like leafhoppers (Auchenorrhyncha). Our study therefore aims to analyse the impact of local climate, landscape structure and habitat quality on leafhopper assemblages. Several environmental factors were assessed and species richness of leafhoppers was sampled on 30 acidic grassland patches in Central Germany. We used generalised linear models (GLM) to determine the variables that influence species richness. Both landscape structure and habitat quality had a strong influence on the number of leafhopper species. At the landscape scale, a high diversity of open land cover types positively affected species richness. Furthermore, species richness increased with decreasing cover of arable land in the surroundings of a habitat fragment. The best predictor at the habitat scale was the structural diversity, which had a positive impact on the numbers of leafhoppers. Local climatic conditions and patch area played a minor role and had an effect only on threatened species. We recommend establishing a great variety of different structural types within a patch in order to promote species-rich leafhopper assemblages. In addition, conservationists should focus their efforts on the maintenance of different types of grasslands in the surroundings of habitat fragments.

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SLOSS – single large or several small: biodiversity conservation across taxa and landscapes

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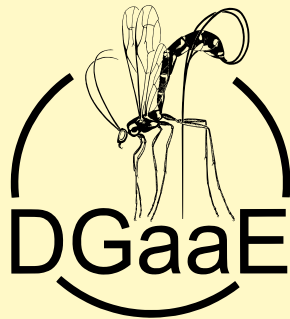
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Agricultural intensification has been shown to reduce biodiversity through processes such as habitat degradation and fragmentation. We tested whether several small or single large habitat fragments (re-visiting the “SLOSS” debate) support more species across a wide range of taxonomic groups (plants, leafhoppers, true bugs,

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Nachrichten



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