Abstract*

Ants (Hymenoptera: Formicidae) in restored seminatural grasslands in Sweden: species richness and community composition

Henriette DAHMS, Volkmar WOLTERS & Jens DAUBER

Dipl. Biol. Henriette Dahms (contact author), Prof. Dr. Volkmar Wolters & Dr. Jens Dauber, Department of Animal Ecology, IFZ, Justus-Liebig-University, Heinrich-Buff-Ring 26-32, D-35392 Giessen, Germany.
E-mail: henriette.dahms@bio.uni-giessen.de

Myrmecol. News 10: 103

A long tradition of grazing and mowing has created seminatural grasslands in Northern Europe, harbouring a remarkably high biodiversity on small spatial scales (DAUBER & al. 2006). During the 20th century, the area covered by these habitats has decreased dramatically. This was mostly due to the abandonment of traditional low-input farming systems, resulting in the afforestation of formerly open habitats (BAKKER & BERENDSE 1999). During recent decades, an increasing number of grasslands have been restored by the cutting-down of trees and the reintroducing of grazing. We have studied ant communities in 22 restored seminatural grasslands and continuously managed control sites in Sweden. We examined how species richness and community composition were affected by the abundance of trees and shrubs, the restoration and the subsequent grazing intensity (measured as vegetation height). In total, we found a high number of 27 ant species. Younger restored sites (5 - 8 years) harboured a lower number of open landscape species and lower species richness per site than older restored (9 - 12 years) and control sites, while there was no difference in the number of forest species. The number of trees and shrubs proved to have a strong impact on the ant communities. The post-restoration grazing intensity primarily increased the richness of open landscape species (Fig. 1). We conclude that the restoration efforts have been successful in terms of the species richness per site. Regular and moderate grazing subsequent to the restoration is required to support a high abundance of open landscape species.

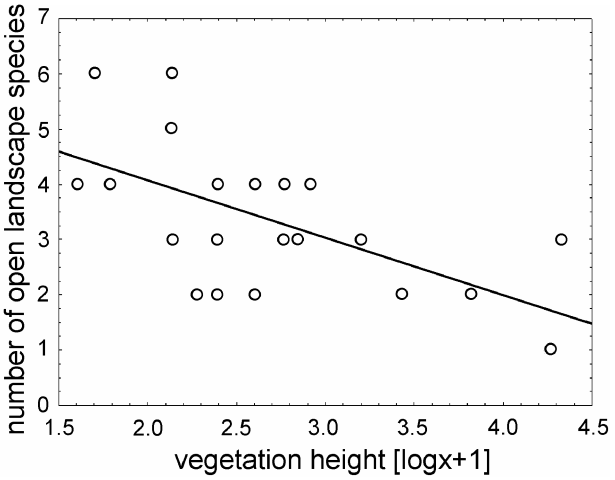

Fig. 1: The number of open landscape species per site in relation to grazing intensity, measured as vegetation height ($r = -0.60$, $p = 0.003$).

References

BAKKER, J.P. & BERENDSE, F. 1999: Constraints in the restoration of ecological diversity in grassland and heathland communities. – Trends in Ecology & Evolution 14: 63-68.

DAUBER, J., BENGTSSON, J. & LENOIR, L. 2006: Evaluating effects of habitat loss and land-use continuity on ant species richness in seminatural grassland remnants. – Conservation Biology 20: 1150-1160.

* Based on a presentation at the 2nd Central European Workshop of Myrmecology at Szeged, Hungary, 17 - 19 May 2007