

Can wild herbivores provide functional connectivity between isolated grassland habitats?



Alistair Auffret & Jan Plue
Stockholm University

As semi-natural grassland habitat has seen a sharp decline during the 20th century, the populations of large wild herbivores have dramatically increased. These animals have been found to be effective seed dispersers, but are usually studied in the woodland context.

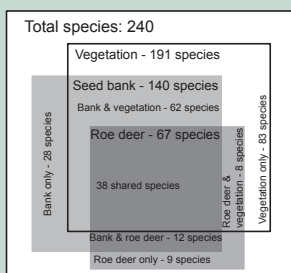
We investigated the potential of roe deer (*Capreolus capreolus*) to provide functional connectivity for plant communities between fragmented grassland and former-grassland habitats through seed dispersal in their dung. Eight landscapes containing a total of 97 grassland habitats were searched during two growing seasons.



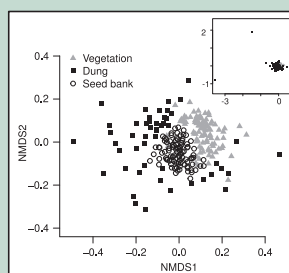
Dispersal



Seeds in the dung were compared to the species present in the established vegetation and the soil seed bank at each site.



One-quarter of all species observed in the vegetation were dispersed by roe deer, including a third of all local grassland specialists.



The species composition of the three sources of diversity were clearly separated, with the dung especially spread in terms of species dispersed.

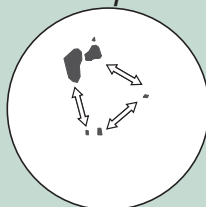
Scale-dependent diversity effects

Site level



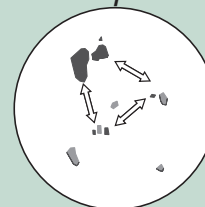
New species were delivered to almost all sites, potentially contributing to local (alpha) diversity.

Landscape level I



A large fraction of dispersed species were found in other sites in the landscape, indicating the potential to reduce beta diversity between sites.

Landscape level II



Many sites never received roe deer dung. By only being active in some parts of the landscape, deer can contribute to landscape-scale (gamma) diversity.

Functional connectivity

Roe deer dispersed seeds between fragmented grassland habitats, with consequences for diversity at multiple spatial scales. Despite dispersing a number of grassland species and local specialists, many species in the vegetation were not represented and must persist or disperse in order to survive grassland abandonment.



✉ alistair.auffret@natgeo.su.se

🐦 @AGAuffret

Scan the QR code for a pdf of the poster and links to my other work

