To maximize the restoration success, a large-scale (almost 20,000 m²) field experiment was started after topsoil three levels were applied: three pH treatments (control, S addition (-pH), and CaMg(CO₃)₂ addition (+pH)) and three heather vegetation. After removal of topsoil and restoration of natural hydrology, in 2011 two factorial treatments with Here we studied a dry heathland restoration on former agricultural land, located within a larger matrix of primarily development.

Interrelations of fungal and plant community dynamics in heathland restoration through soil transfer

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Heathlands in Western Europe have been in decline over the last century despite many efforts for preservation. An important reason may be that typical species are no longer present locally nor have sufficient dispersal capacity to reach a restored site. Recent ideas to explain such poor restoration response are that the soil community is not or ill-adapted to the target ecosystem and may supply nutrients via decomposition at a too high or too low rate. This view puts much emphasis on dispersal and establishment of the soil community as major determinants of the functioning of herbaceous communities. The present contribution will discuss to what degree there is evidence that such bottleneck actually exists.

S-17.2

Manipulation of soil buffering and biota addition: restoration of heathlands on former agricultural lands.

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To connect and reinforce existing dry and wet heathlands, agricultural areas are reclaimed and transformed into heathland. Therefore, the nutrient rich soil-layer is removed, and the natural hydrology restored. Even though abiotic conditions are suitable for the target vegetation after these restoration measured, vegetation development is not always as desired. Causes might be the dispersal limitation of plants or the relative too high soil buffering caused by liming in the agricultural past.

To maximise the restoration success, a large-scale (almost 20,000 m²) field experiment was started after topsoil removal in 2011. To better understand the role of soil pH on vegetation development, a pH gradient was created by adding elemental sulphur or lime. The constraint of limited dispersal of plants was tested by adding either fresh herbage (freshly cut hay) or sods (soil & standing vegetation) in a full factorial design with 3 replicates. The development of soil chemistry (nutrients & base cations) was measured for seven years as well as the development of the vegetation. Target was to restore a species-rich dry and wet heathland community. In this presentation the results of this experiment will be presented. Based on the findings of this large-scale study, restoration techniques aiming on heathland restoration on former agricultural soils will be discussed.

S-17.3

Interrelations of fungal and plant community dynamics in heathland restoration through soil transfer