

The early effects of reintroducing mowing management and removing shrubs on fen and meadow vegetation

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As the use on fens in Poland in the last century was most often connected with their reclamation and extensive meadow use, the occurrence of most species on those habitats depends on regularly applied management. Characteristic fen species are bound to nutrient-poor soils with high moisture. However, as an effect of agricultural development, less productive land, like wet meadows, is being abandoned and after several years overgrows with shrub vegetation. Still working but left unmanaged, reclamation systems on formerly used land cause constant dewatering of most of fen ecosystems in Poland. As an effect, many fen meadow species are becoming endangered.

Therefore, restoring meadow use on fens is more and more often a question of nature protection rather than need of agriculture.

Aiming at checking the possibility of restoring biodiversity on fen meadows and time in which rare species reappear on restored areas, two degraded, formerly valuable ecosystems have been chosen. Both of them are situated in central Poland, near Warsaw. The litter meadow on shallow peat in the reserve Kalinowa Łąka had been abandoned for 15 years. The restoration area on another site, Bagno Całowanie, had been severely drained and the fen moss ecosystems haven't been managed for about 50 years. Both areas have overgrown with willow shrubs (*Salici pentandro-cinereae*) and ruderal vegetation. After that time the shrubs were removed and the mowing management was restored. On Bagno Całowanie, outflow ditches were blocked to increase the groundwater level. Restoration effects were monitored by identifying the occurrence of target species formerly present on the areas and in the surrounding. On Bagno Całowanie, also non-target species were monitored.

The monitoring on the mown area shows different restoration effects, which are dependent on the time of abandonment and shading, as well as the time of management reintroduction. Whereas in Kalinowa Łąka the rare plants' species reappeared and the number of rare species is still growing after 5 years from the meadow restoration, on Bagno Całowanie the restoration success in the first year is much smaller.