

Management of semi-natural grassland vegetation: long-term effects of grazing, mowing and different mowing techniques

Abstract

Semi-natural grasslands are species-rich and one of the most threatened habitats in Europe, since land-use changes have led to reduced area of grassland. Appropriate management practices like grazing or mowing is needed to maintain the conservation values and species-richness of semi-natural grasslands. However, few studies have investigated which of grazing or mowing is most appropriate. Furthermore, almost no studies have investigated which mowing technique is best for the conservation value of grassland flora. The aim of this study was to determine which management practice of grazing and mowing, and which mowing technique, has the most positive effect on grassland flora. Data from two long-term trials were evaluated: one compared the effect of grazing and mowing in eleven sites in southern Sweden during at least twelve years; the other compared the effect of the knife mower and grass trimmer at different cutting heights in one site during twelve years. Meta-analysis was used, based on the odds for a plant record being an indicator species, using eight different indicator systems of classification of grassland plants. Over time, results show increasing odds of finding indicators of good management and no change in odds of finding indicators of lack of management in mowed compared to grazed plots. There were no differences in the odds of finding any indicator species for any of the mowing techniques. Hence, to maintain the conservation values of semi-natural grasslands, mowing is the better management practice compared to grazing. Mowing using a knife mower or grass trimmer has similar effects, and can both be recommended.

Keywords: grazing, mowing, mowing techniques, management, semi-natural grassland, indicators, meta-analysis, Sweden