

Changes in the steppe vegetation of the solitary conic hill Oblík in the České Středohoří Protected Landscape Area

This diploma thesis is based on a comparison of vegetation and chemical attributes of the soil between the years 1973 and 2006/7 in the model area of the Oblík hill. The primary source of old botanical and pedological data is a series of diploma theses by students from the Department of Botany, Faculty of Science, Charles University from the seventies of the 20th Century (Březinová 1973, Klimešová 1973, Suchara 1974). The study is limited by old methodology. Vegetation data were compared on the different levels - phytosociological relevés, non-destructive estimation of shrub biomass, photogrammetry of shrub communities and taxonomical classification. Environmental changes were studied by repeating chemical analyses (contents of N, C, K, Ca, C/N, pH) and indirectly using Ellenberg's indication values.

Today, there is higher species diversity and a high turnover of species in the area. The number of pastures and mesophilous broad-leaved grassland species has decreased. The number of nitrophilous and margin species, weeds and shrubs has increased. The area of the syntaxonomical units *Festuco valesiaca*–*Stipetum capillatae*, *Koelerio macranthae*–*Stipetum joannis*, *Stipetum tirsae* and *Scabioso ochroleuca*–*Brachypodium pinnatii* has decreased. The area of *Erysimo crepidifolii*–*Festucetum valesiaca* grasslands and shrub communities *Ligustro vulgaris*–*Prunetum spinosae* and *Rhamno cathartica*–*Cornetum sanguinei* is now higher (classification according to Chytrý 2006). The biomass of shrubs along the SE transect of shrubs has increased three-fold. A huge invasion of shrubs in the area was revealed by the photogrammetric method (max. E, N, W, S). Analyses of Ellenberg's indicator values showed a higher level of continentality on the S and W slopes and a higher soil reaction on the S slope. The results have also shown a higher content of soil carbon and calcium.

The changes found in the area could be caused by changes in land use in the 80ties, when pasture management ended. The fine causality cannot be untangled because there were not control plots in the area.

Today, grassland vegetation on the eastern slope and on the western foothill is endangered by succession of shrub communities. The southern slope and the higher part of the western slope is covered by stable vegetation of steppe rocky grasslands. The aim of the study was to uncover these changes and to try to identify the reasons behind them. The results are potentially useful in practical protection management. The general idea of the study was to contribute to the conservation and stability of steppe vegetation in the Czech Republic.