

Abstract

Vegetation changes in meadows of the basin of the Žebrákovský stream after 30 years

The task of this study was to examine the vegetation changes in meadows that occurred over 30 years. The study area is situated in the Žebrákovský brook basin in western part of the Czech-Moravian Uplands, the Czech Republic.

During the first time period of the investigations in 70's, the meadow vegetation was mapped and permanent plots were established. Vegetation (phytosociological relevés) and ecological factors (soil water regime, soil characteristics) were observed at the permanent plots, Neuhäusl et al. (1983).

In the beginning of 80's, one part of the meadows was recultivated and intensively fertilised for several years, the others were managed still in a traditional way. The set of phytosociological relevés and ecological factors (soil water regime, soil characteristics) were observed at the permanent plots, Hadincová (1989).

In 2005-2006, I repeated the map of actual vegetation using the original definitions of plant communities and observed vegetation and ecological factors (the soil water regime and soil pH) at the permanent plots.

I used the data from both time periods and compared them with my observations in 2005-2006 to find out 1/ vegetation changes at the level of plant communities, 2/ changes at the level of plant species, 3/ the cause of these changes.

It was found that obvious vegetation changes happened over 30 years. Large parts of former species-rich meadows turned into stands composed of high competitive species indicating secondary succession due to temporal absence of management. Parts of meadows still managed in a traditional way showed the smallest vegetation changes. The meadows recultivated in 80's were partly re-colonised by original plant communities after 20 years of management without fertilizers. Ellenberg's values of the present vegetation of the basin indicate, in general, more nitrophilous vegetation than it was in 70's. These changes were accompanied by disappearance of majority of endangered plant species.

Similar trends were described in several other European countries (Prach 1993, Kottańska 1993, Guldrun et al. 2000).

Keywords: vegetation changes, meadows, soil water regime, management, land use, recultivations, eutrofication