

This work deals with the issue of the revitalization of harvested peat lands. Peat lands dominated by bryophyte *Sphagnum* do not readily return to their natural stages. In the theoretical part I conclude a) experience with restoring the hydrological regime and b) successes in revegetation by typical peat land vegetation, which is the essential pre-requisite for developing functional peat land ecosystem.

The practical part is focused on my own research of diversity and ecology of algae at cut-away and later restored peat land Babín in the vicinity of Žďár nad Sázavou. These samples of phytobenthos were collected over a three year span from 2007 to 2009. I have examined the diversity of these samples by optical microscope, using the data I collected about species abundance for multidimensional statistical analysis.