

Abstract

Orchids are an endangered group of plants, protected both in the Czech Republic and in the whole world. Questions of their protection are therefore lively discussed, but not all factors, affecting their presence, are known so far. The purpose of this work was to find out, which environmental factors influence the existence of certain orchid species at their localities in the selected area. This is important for better protection of orchids, because only by knowing these factors we can find new sites, or improve management plans of the existing ones. Another purpose of this work was to find out what is the main reason for extinction of orchids at their historical localities and whether or not there is a possibility of finding other, yet unknown localities of these species. This thesis is based on data from databases, which were also updated during the data collection. The data were processed by computer software MaxEnt, which produces species distribution models and allows to predict potential occurrence of orchids even at yet unknown localities. This software also analyses the environmental factors affecting species presence. I found that the main reason of extinction of orchids at their historical localities was overgrowing. Main environmental factors affecting orchid occurrence were analysed for four most numerous species of orchids in South Bohemia: *D. majalis*, *C. damasonium*, *P. bifolia* and *E. atrorubens*. The main factors affecting their occurrence were: KVES (consolidated layer of ecosystems), heterogeneity of habitats, the amount of arable fields, vertical heterogeneity and alcalinity. I found that the existence of orchids is possible at other yet unknown localities and these localities were highlighted in maps of potential presence. This thesis can help to find new localities of orchids and to understand, which environmental factors influence occurrence of these endangered species of plants and so to help in their protection.

Key words: Orchids, localities, database