

## **Abstract**

This review examines the responses of four taxonomic groups to forest environmental variables, such as forest continuity, stand age, naturalness, structural attributes, tree species composition, microclimatic and soil conditions, landscape and historical factors. The focus was on correlations in species richness of vascular plants, bryophytes, lichens and fungi. The evaluated studies examined at least two of the selected groups and were carried out across Europe. The most significant correlations were found between cryptogamic species in relation to structural attributes typical of old unmanaged forest and between vascular plants, terricolous bryophytes and lichens in relation to light availability.

The results show lichens as the group most highly correlated with other taxonomic groups. However, selecting lichens as a surrogate group when monitoring biodiversity of other groups is insufficient. In this respect, it is suggested to conduct surveys including more taxa and to use different indicators for different forest types.

**Keywords: bryophytes, environmental variables, forest, fungi, lichens, multi-taxon approach, species richness, vascular plants**