

# **Ódor, P. et al. (2006): Diversity of dead wood inhabiting fungi and bryophytes in semi-natural beech forests in Europe. Biological Conservation 131: 58-71.**

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## **Abstract**

Saproxyllic organisms are among the most threatened species in Europe and constitute a major conservation problem because they depend on the most important forestry product – dead wood. Diversity of fungal and bryophyte communities occurring on dead beech trees was analyzed in five European countries (Slovenia, Hungary, The Netherlands, Belgium and Denmark) considering tree level species richness (TLSR), country level species richness (CLSR), frequency distributions of species, occurrence of threatened species and relations between TLSR and decay stage, tree size and countries. Altogether 1009 trees were inventoried in 19 beech dominated forest reserves. The number of fungi in the full dataset was approximately three times larger (456 versus 161 species) and the proportion of low frequent species was higher than among bryophytes. The species richness of bryophytes and fungi was significantly different among countries considering both TLSR and CLSR. In addition the diversity patterns deviated considerably between the two groups of organisms. Slovenian sites appeared to be biodiversity hotspots for bryophytes characterized by high TLSR and CLSR and a high fraction of threatened species. Hungarian sites had somewhat lower bryophyte diversity, while the Atlantic region had deteriorated assemblages. Fungal species richness was very high in Denmark, but the Hungarian and Slovenian sites were richer in threatened and low frequency species. Tree size was better able to explain variation in TLSR in both organism groups than decay stage. TLSR was found to vary significantly between countries but the difference was most considerable in the case of bryophytes. The diversity patterns of both organism groups along the investigated geographical gradient appear to be influenced by both climatic and management related factors (forest

history, dead wood availability and continuity, habitat fragmentation). There is no doubt that an increase in the abundance of dead wood in European beech forests will benefit diversity of saproxylic fungi and bryophytes, especially if a continuous presence of large diameter logs are secured within individual stands.

[biodiversity: fungus, lichen](#)

[biodiversity: moss](#)

[deadwood](#)

[methodology: analysis, statistics](#)

Notes

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References

Fungi, Bryophytes, Coarse woody debris, Dead wood, Diversity, *Fagus sylvatica*  
gomba, moha, holtfa, diverzitás, bükk

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