

Brunialti, G., Frati, L., Aleffi, M., Marignani, M., Rosati, L., Burrascano, S. & Ravera, S. (2010): Lichens and bryophytes as indicators of old-growth features in Mediterranean forests. Plant Biosystems 144(1): 221-233.

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Short reference: Brunialti et al. (2010)

First author: Brunialti, G.

Year: 2010

Abstract

Old-growth forests: An ecosystem approach

Lichens and bryophytes as indicators of old-growth features in Mediterranean forests

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Abstract:

This study is focused on the selection of variables affecting lichen and bryophyte diversity in Mediterranean deciduous forests. Plots representing two forest types (*Fagus sylvatica* and *Quercus cerris* forests) and two forest continuity categories (old-growth (OG) and non-OG forests) were selected in the Cilento and Vallo di Diano National Park (Italy). The presence and the abundance of bryophytes and epiphytic lichens were recorded. Structural variables of the forests and vascular plant species richness have been used as predictors. A strong positive correspondence between the two groups of organisms was found. Higher species richness and the distribution of rare species are related to OG stands, while a qualitative (species composition) rather than a quantitative (species richness) difference between the two forest types was observed. Some species elsewhere considered as indicators of forest continuity, such as *Lobaria pulmonaria*, *Antitrichia curtipendula*, and *Homalothecium sericeum*, are associated with OG forests, independently from forest type, suggesting that they can be regarded as suitable indicators also in Mediterranean forests. Finally, our results suggest that old trees, high levels of basal area, a broad range of diameter classes, and high understory diversity are the main structural features affecting cryptogamic

communities, while no correlation was found with the occurrence of deadwood.

biodiversity: fungus, lichen

biodiversity: moss

forest ecology

forest structure: stand

forest structure: herb layer

deadwood

Notes

Bryophytes, diameter classes, forest continuity, lichens, rare species, species richness

Címszavazva - GE

Publisher: Taylor & Francis

Journal: Plant Biosystems

Location: ER Archívum (2010/P-030)

Type: scientific paper

Katalógusba vette: Gulyás Györgyi

Katalógusbavétel időpontja: Mon, 06/20/2011 - 12:00