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Abstract

Old-growth forests: An ecosystem approach
Multi-taxon and forest structure sampling for identification of indicators and monitoring of old-growth forest
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Abstract:
The most commonly used old-growth forest indicators are structural attributes; nevertheless, they do not necessarily represent the biodiversity value of old-growth forests. The aim of this study is to analyse the relationships between species richness data of different taxa and structural indicators of old-growth and to identify taxonomic/functional groups, species and structural attributes that may be used as indicators of old-growth. To achieve this goal we sampled forest structure, vascular plants, lichens, bryophytes, fungi, saproxylic beetles and birds in mature and old-growth stands in southern Italy. We calculated Spearman's correlation coefficients between species richness data and structural attributes. Analyses of indicator species, co-occurences and two-way clusters were performed on the multi-taxonomic list. The group of vascular plants most significantly correlated with other groups in terms of species richness; furthermore, it displays the highest proportion of between-group co-occurences. The resulting multi-taxonomic list of potential indicators may serve as an effective means of detecting and monitoring forest ecosysems; however, for this goal, structure-based indicators, such as forest structural attributes and vascular plant

species composition, are of primary importance.

biodiversity
forest ecology
forest structure: stand
Notes

Multi-taxon species lists, species co-occurence, structural attributes, structure-based indicators, taxon-based indicators

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