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Plant Biosystems 144(1): 202-210.

Short reference: Manes et al. (2010)

First author: Manes, F.

Year: 2010

Abstract

Old-growth forests: An ecosystem approach

A multiscale analysis of canopy structure in Fagus sylvatica L. and Quercus cerris

L. old-growth forests in the Cilento and Vallo di Diano National Park

F. Manes, C. Ricotta, E. Salvatori, S. Bajocco, & C. Blasi

Abstract:

Broadleaved forest is one of the most severely exploited and threatened ecosystems worldwide such that many authors have highlighted the scarcity of undisturbed old-growth broadleaved forests, especially in southern Europe. From an ecological perspective, old-growth forests are considered to be significant for their structural diversity and complex ecological relationships among species. In this paper, we compare ground measurements of leaf area index (LAI) and the remotely sensed normalized difference vegetation index (NDVI) autocorrelation pattern of two old-growth forest stands in the Cilento National Park (southern Italy) with two nearby managed forests stands of the same type. Results show that old-growth forests have higher fine-scale variability in both LAI and NDVI values and longer autocorrelation ranges than the corresponding managed forests. The potential relevance of these findings for the single large or several small (SLOSS) debate is also briefly discussed.

biodiversity

forest ecology

forest structure: stand

methodology: analysis, statistics

ecosystem: growth, development, production

Notes

Biomass, LAI, NDVI, semivariance, SLOSS, spatial autocorrelation

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