

# Forest Landscapes and Global Change

New Frontiers  
in Management,  
Conservation  
and Restoration

Abstracts

Edited by  
João Carlos Azevedo  
Manuel Feliciano  
José Castro  
Maria Alice Pinto



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**IMPACT OF TREE SPECIES REPLACEMENT ON CARBON STOCKS IN FOREST FLOOR AND MINERAL SOIL**

FELÍCIA FONSECA & TOMÁS DE FIGUEIREDO

Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança (ESAB/IPB), Bragança, Portugal

The increase in atmospheric carbon content, as expected considering actual trends, draws attention to the highly valuable role of forest ecosystems in the global carbon cycle. Accordingly, the carbon storage capacity by different species should be a decision support tool when introducing new forest species. This study aims at evaluating the influence of replacing areas of *Quercus pyrenaica*, which represents native vegetation of Serra da Nogueira, in the northeast of Portugal, by *Pseudotsuga menziesii* on carbon stocks in forest floor and mineral soil. Three sampling areas were selected in adjacent locations with similar soil and climate conditions. The first area, covered by *Quercus pyrenaica* (QP), represents the original soil. The second area is in a 40 years old stand of *Pseudotsuga menziesii* (PM40), and the third one, also under *Pseudotsuga menziesii*, is 15 years old (PM15). In each sampling area, at 10 randomly selected points, samples were collected in the forest floor (0.25 m<sup>2</sup> quadrat) and in the soil (at 0-5, 5-10 and 10-20 cm depth). Results show that carbon concentration is significantly higher in forest floor under native species (QP), but the amount of organic residues accumulated on the soil surface is higher under the introduced specie (PM40 and PM15). The forest floor stores 15, 12 and 6% of total carbon for PM40, PM15 and QP, respectively. Four decades after species replacement, a soil organic carbon loss is observed, although no significant differences were found when comparing soil under introduced (PM) with original species (QP). A carbon loss of around 30%, in PM15, and gains of about 10%, in PM40, are computed when considering mineral soil and forest floor together. As shown by results, in PM, forest floor was a carbon sink whilst mineral soil was a carbon source.

Poster Session **Tools of landscape assessment and management PT 8**

**IMPORTANCE OF HABITAT PATCHES FOR THE MAINTENANCE OF LANDSCAPE CONNECTIVITY IN BAIRD'S TAPIR HABITAT IN GUATEMALA**

FERNANDO CASTILLO, MANOLO GARCÍA, RAQUEL LEONARDO, LIZA GARCÍA & IVONNE GÓMEZ

Centre for Conservation Studies -CECON- University of San Carlos, Guatemala

Landscape connectivity is important for the survival of different species. Baird's tapir is one of them that has seen its habitat being reduced and fragmented in Guatemala. Landscape management needs to identify the importance of different patches in order to set conservation priorities. An assessment of the importance of patches in the potential habitat for this species in Guatemala was done using software Conefor Sensinode 2.2. Patches which are important for the conservation of the species based on its connectivity characteristics were identified with the Integral Index of Connectivity –IIC- which is a binary connectivity index. The results showed that Mayan Biosphere Reserve, and its major patches located in the northern part of the country, have the highest IIC and thus the major importance in providing connected habitat suitable for the survival of Baird's tapir. Since this area has been suffering important losses of habitat because lack of state responses, more strong political measures are needed to keep and enhance landscape connectivity.