

IMPACTS OF FOREST STAND DENSITY ON THE BIODIVERSITY AND FUNCTIONING OF THE PLANT-SOIL INTERFACE

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This paper is the English abstract of: « Impact de la densité des peuplements forestiers sur la biodiversité et le fonctionnement biologique de l'interface sol-végétation » – Revue forestière française, 4-2014. <http://documents.irevues.inist.fr/handle/2042/4752>.

ABSTRACT

Global warming imposes new constraints on forest ecosystems and induces forest management adaptation. French forest policy currently advocates more intensive thinning so as to mitigate the increased risk of water stress from more frequent summer droughts. However, few studies have yet assessed the potential impact of these intensive forest management practices on soil biodiversity, which is the subject of my thesis. The first results show that the soil food web structure is affected by more intensive thinning. Indeed, the abundance of several soil detritivore groups, *i.e.* springtails, mites and millipedes is negatively impacted by stand density reduction. The earthworm community is also affected, as endogeic abundance increases with stand density reduction while anecic abundance decreases. This could have important consequences in terms of litter decomposition and nutrient cycling, which are essential functions for forest soil fertility.

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