

LONG-TERM EFFECT OF WILDFIRES ON VASCULAR PLANT AND SOIL INVERTEBRATE DIVERSITY IN PRIMARY FIR-SPRUCE FORESTS OF THE URAL MOUNTAINS (NORTH EURASIA)

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Abstract. One of the essential tasks of sustainable forest management is to maintain native biodiversity. Primary forest research is one of the ways to understand what this biodiversity is. *Materials and methods.* The primary, as confirmed by their land-use history and structural peculiarities, mesic dark-conifer forests remain in Visim and Pechora–Ilych nature biosphere reserves (boreal and sub-boreal zones respectively, the Ural Mountains, Russian Federation). We compared the primary forests and post fire 100-year small-leaved deciduous forests by diversity of vascular flora and soil invertebrate macrofauna. *Results and discussion.* The diversity of some functional groups of species (low boreal herbs, earthworms) in post fire forests is lower than in primary forests, the research shows. These species largely depend on deadwood and other tree-related microhabitats common in the primary forests but not so in the 100-year post fire forests. Repeated fires at intervals of several decades, as is the case with the use of prescribed fires in forest management, will be expected to reduce the biodiversity quality of these specialist species. Additionally, we revealed that post fire forest flora is more synanthropic in the woodland of a small area (Visim reserve) than in the intact forest landscape (Pechora–Ilych reserve). It demonstrates that, within extensive woodlands, native forests are more resilient to sporadic stand-replacing disturbances than small woodlands. *Conclusion.* Strict conservation of intact forest landscapes is necessary as they serve as large buffer areas around the remaining primary forests to maintain native biodiversity.

Keywords: boreal and sub-boreal forests, functional groups of species, land-use history, plant and soil-invertebrate species richness, post-fire recovery, tree populations

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