

Springtail (Hexapoda: Collembola) fauna in the burnt boreal forests of European Russia

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Abstract

© INVERTEBRATE ZOOLOGY, 2018. We investigated fauna and community composition of springtails in the burnt and unburnt boreal forests of European Russia. We also analyzed ecoregional differences in the effect of fire disturbance on collembolan community faunistic similarity on an example of three different ecoregions of the boreal forest biome in the study territory. We collected and identified 6799 springtail individuals representing 14 families, 41 genera and 94 species. In the burnt plots we observed consistent shifts in the springtail community dominance structure across all studied ecoregions. The effect of fire on the faunistic similarity of springtail communities was strongly modulated by ecoregion: within-ecoregion similarity between plots was always higher than the between-region similarity. Fires resulted in the moderate decrease of the total abundance of springtails with trans-holarctic distribution in all ecoregions and additionally in increase of springtails with west-palaeartic distribution in southern ecoregion. We conclude that five years after burning it is very important to standardize fire-induced changes in the faunistic composition of springtail communities to the actual geographic location within spatially extensive biomes.

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Keywords

Collembolans, European Russia, Fire disturbance, Soil fauna, Taiga

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