



Post-fire succession of ground vegetation of central Siberia in Scots pine forests

N. Kovaleva (1), G.A. Ivanova (1), and S.G. Conard (2)

(1) V.N. Sukachev Institute of Forest, Russian Federation (nk-75@mail.ru), (2) USDA Forest Service, Rocky Mountain Research Station, Missoula, MT, USA

Extensive wildfires have affected the Russian region in the last decade. Scots pine forests (*Pinus sylvestris* L.) are widespread in central Siberia and fire occurrence is high in these forests, whose dominant fire regime is one of frequent surface fires. We studied post-fire succession of ground vegetation has been studied on nine experimental fires of varying severity (from 620 to 5220 kW/m) in middle taiga Scots pine forests of central Siberia (Russia). It proved from our study that all species of the succession process are present from initial stages. We did not find any trend of ground vegetation diversity with the time during 8 years after the fire. Our investigation showed that post-fire recovery of the ground vegetation is determined by initial forest type, fire severity and litter burning depth. Fire severity had a clear effect in initial succession in study area and it clearly had an impact on percentage cover, biomass and structure of ground vegetation. In a lesser degree the small shrubs are damaged during ground fires. The dominating species (*Vaccinium vitis-idaea* and *V. myrtillus*) regained the cover values above or close to 6—8 years. The post-fire biomass of ground vegetation 93—100% consists of species (*Vaccinium vitis-idaea* and *V. myrtillus*) that survived after the fire and increased in the cover with the time. In pine forests mosses and lichens suffer to a greater degree after ground fires. Lichen layer was completely lost after the fires of any severity. Decrease of mosses species diversity takes place after ground fires. The post-fire cover and species diversity of the green mosses were progressively lower with increasing the fire severity during the observation period. Maximum changes are discovered in the post-fire structure of plant microgroups after the high-severity fire which resulted in intensive invasion by the post-fire mosses (*Polytrichum strictum* and *P. commune*). There is a positive trend of green moss microgroups recovery after fires of moderate- and low-severity.