16. Future perspective of forest management in Siberian permafrost area

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Abstract

Forest area of Russia is about 900 million ha, 22% of global forest area and 52% of boreal forest. Russian boreal forest, mainly permafrost area, habitually occur forest firs and more than 40 million ha of forest area burned during the last decade. The burned area by big fires are 11 million ha in 1998, 11.7 million ha in 2002 and 19.3 million ha in 2003 by satellite derived data (IFFN 2003, FAO 2004). Generally, fire generates the specific features of ecological regimes at the landscape scale. There is no doubt that fires also have had a significant negative impact on biodiversity in the boreal zone. Wildfires from natural causes (lightning) constitute a very important ecological factor in the formation and sustainability of boreal forests. The official statistics show that between 20,000 and 400,000 fires occur annually affecting an area of 2 or 3 million ha of forest and other lands in Russia (Davidenko et al. 2003). Natural fire regimes are characterized by fires of various return intervals and severities. Fires of high intensity and high severity that involve destruction of forest stands with subsequent ecosystem regeneration (stand-replacement fires) are also a typical feature of the complex ecosystem composite of boreal Eurasia.

In interaction with the climate and local growing conditions forest fire controls the age structure, species composition, landscape diversity and mosaic of vegetation, as well as affecting the global carbon cycle.

I would like to present the following subjects and discuss the perspective of forest management in Siberian permafrost area.

1. The present state of forests in Siberian permafrost area
2. Impact of forest fires to the forests
3. Forest dynamics after fires
4. Main factors affecting carbon budget after forest fire