



The estimation of territory predeposition to wildfires

Ekaterina Panchenko and Anatoly Dukarev

Institute of Monitoring of Climatic and Ecological Systems (IMCES) SB RAS, Department of Ecological Research, Tomsk, Russian Federation (pakanatya@sibmail.com)

Wildfires have significant environmental effects. The indirect damages because of fires are an emission of various combustion products such as aerosols, greenhouse gases and carcinogen. Analysis of smoke emission show that from 1 ha burning area emitted aerosols from 0.2 to 1 ton. The aim of our research is to estimate biomass burning emission:

Biomass Burning Emission=BA x FL x CE x EF,

where BA is Burned Area (ha); FL is forest litter cover (cm); CE is Combustion Efficiency (0-1), depends on a class of fire danger; EF is Emission Factor (kg emitted / kg dry-mass burnt). Consequently for estimation of biomass burning emission it is necessary to analyze of territory predisposition to wildfires and give characteristic of combustion material types for detection fire hazard, for prognosis fire origin and extension. Prognosis of occurrence of wildfires and definition of emissions is possible by means of data of depth forest litter, types of vegetation and type of landscapes including concrete weather conditions (seasons, length of arid period, current temperature, wind speed and its direction).

The investigated object is the territory Tomskii district near to the city of Tomsk (56° 31 N-85°08 E) – with the population more than 500 thousand people.

The conducted analysis of investigated territory and the calculation will be basic prognostic model for researching wildfires.