

THE IMPACT OF CLIMATE CHANGE ON FOREST ECOSYSTEMS

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The climate of Ukraine is largely formed under act of global changes of climate. Most intensively a rise in temperature of climate in Ukraine took place in a period from 1988-1989, when the middle monthly temperature of winter and summer months grew notably. Change of temperature condition and mode of moistening in Ukraine and increase of amount of the elemental phenomena related to the changes of atmospheric circulation in the region of Europe and Atlantic ocean will influence in to the further on a future climate of region, that influence on the forest ecological systems.

The most credible speed of increase of middle global temperature and entering reason is analysed atmosphere carbonate and other greenhouse gases, changes of annual temperature of atmosphere for period 1900-2000 and also increase for 30 last the of middle annual amount of forest fires and influence of climatic changes on distribution of forest wreckers and pathogens in forest ecosystems.

For 100 last the mainly the north regions of Ukraine became warm in winter months approximately in two times stronger from a global level that practically coincides with middle for all territory of Ukraine. The middle monthly temperature of summer months in the south regions of Ukraine practically did not change or even went down insignificantly.

The changes of climate induce the damages of the forest ecological systems, that predetermine:

- by the specific of feed of forest wreckers on weak a drought arboreal different plants;
- by the increase of duration of droughly period especially in the forest north regions of Ukraine;
- by the increase of natural fire hazard in the forest planting in the first turn in pine forests.

It is shown the most probable speed average temperature for 10 years for the XXI century is 0.3 degrees Celsius and this is the source of human economic

activity. Over the past 30 years has grown 2.6 times the average annual number of forest fires: 1673 fires are registered during 1980 – 1989, 3917 – during 1990 – 1999, 4743 – during 2000 – 2010 years. For the period 2000 – 2010 years to 50 % increase in area of forest stands that are affected by pests and diseases of forest. During the years 1950 – 2000 in Europe on climate change annually were damaged 35 million m³ timber, in Canada for the years 1977 – 1987 annual losses of wood were 100 million m³ timber and in the USA annually pests and pathogens infected losses of \$ 1.5 trillion.

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Climate change causing damage to forest plantations:

- specificity food forest pests;
- change the physiological conditions of life of mushrooms;
- increase of dry period;
- natural increase fire danger in the pine forests;
- reduction of forests that naturally restored;
- changes in the ecological functions of forest dynamics and succession;
- reduce the period of snow cover and increasing droughts.

Climate warming may lead to on increase in the forests of Ukraine natural fire danger, number of years when forests are under the influence water stress, pests and pathogens destruction, fallen trees and windfalls, degradation beech forests and forest ecosystems as a whole. By increasing the temperature by 1 degree Celsius can move latitudinal limits of climatic zones of Ukraine within 160 kilometres.

Climate change, forest fires, forest pests and diseases, fallen trees, windfalls, degradation beech forests and forest ecosystems.