

IMPACT OF CLIMATE CHANGE ON FOREST ECOSYSTEMS OF URALS

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Ural mountain country is predominantly woodland, despite its meridional extent from the tundra to the steppe zone. Therefore, monitoring of forest ecosystems in this region is essential for the conservation of ecosystem service potential of Ural mountain forests. To carry out this task, we studied the woody vegetation in the Polar Urals (part of the Urals, hardly altered by anthropogenic impacts) of forest land and forest terrestrial small mammals in other parts of the Urals, where human pressure in the observation period did not change significantly.

Carried out by us and colleagues research showed that for half a century in the Polar Urals, there was intense resettlement tree and shrub vegetation in mountain tundra, resulting in shifting of wood stands upwards by 20–60 m in altitude. And wherein degree of afforestation within the tree-line ecotone have increased twice, significantly increased density, crown density and productivity of forest stands.

Changes in the composition of small mammal population in the same period showed a stable tendency to increase the proportion of European fauna complex of species adapted to a warmer ET climate, and reduce the proportion of species of Siberian fauna complex adapted to a severe climate of Siberia. Another manifestation of this trend in the Urals is the shift to the Northern the limits of distribution of some small mammal species. The stability of this trend over half a century and more indicates warming in all territories of the Ural mountain country, despite the absence of direct evidence of appropriate vegetation changes in forest ecosystems in the region.

We suppose that the above data in our report are the evidence of the impact of climate warming on forest ecosystems of Urals, especially clearly expressed in the northern region.

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