



Climate Change Dynamics on the Territory of Southern Part of Eastern Siberia

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Long-term changes of the basic climatic indicators have been executed on a basis of long-term supervision of meteorological stations having the periods of supervision of 65-120 years.

Thermal air mode is characterized by considerable variability in time which is most appreciable in winter months and on the average for a year. An essential increase of average annual air temperature is noted practically on the whole territory since 60th years of the 20th century. The positive regional trend makes 0,2-0,6 degrees per 10 years. In a long-term course of the annual sums of precipitation the tendency for reduction prevails. However in all considered cases the trend size is enormously lower than the value of interannual variations.

Air temperature rise and change of hydrothermal conditions to some extent affect the structure and dynamics of ecosystems or their separate components

By analyzing the long-term hydrothermal conditions of the territory it was revealed that approach of an atmospheric drought is possible in any month of the vegetative period. In May the maximum quantity of droughty years (33-64 %), and years with a strong drought (8-15 %) was observed. In June the repeatability of the droughty periods decreases to 18-43 % of cases. The minimum repeatability as quantities of years with a drought, as years with a strong drought is marked in August.

In spite of the fact that in May the quantity of droughty periods is maximal, strong drought is marked only in one of 7 cases. In September the quantity of strong droughts increases and each 2nd and 3rd drought is strong.

For the station Irkutsk with the longest period of supervision (from the end of a 19-th century and through the present) the repeatability of droughty phenomena for two periods (1882-1939 and 1940-2000) is analyzed.

The quantity of droughts in May in 1940-2000 in comparison with 1882-1939 increased, and in other months decreased. Repeatability of strong droughts decreased in May, did not changed in June, and in July-September no cases with a strong drought was not observed at all. Thus, the climate on the territory became less droughty for last 120 years, and this fact favourably affects agroclimatic characteristics of the territory.

Besides, influence of environmental conditions upon the increment of wood plants was investigated. The estimation of influence degree was carried out using the response function which showed the greatest influence upon the radial increment of pine in the Middle Preangarye – of monthly average temperature of April; in the Upper Preangarye – of the sums of atmospheric precipitation for a hydrological year.

Using Wavelet analysis we estimated the Wolf's number sequences, reflecting solar activity and year-ring-analysis of pine and larch series. The joint analysis of characteristics of solar activity (Wolf's numbers) and a radial increment of pine and larch revealed a unity of cycles in 10-12 years.