



## **The climate of the Taimyr Peninsula in the Holocene and a Forecast of Climatic Changes in the Arctic**

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Based on the data of the spore-pollen and radiocarbon methods during our research of a peat bog in the south-eastern part of the Taimyr Peninsula we discovered for the first time the natural dynamics of the climate for this region during the period of the last 10 500 years [2, 3] and made a long-term forecast of climatic changes both for the Taimyr Peninsula and for other Arctic regions. By the quantitative characteristics of the climate and their dynamics in time, reconstructed for the basin of the Fomich River (71 ° 42 ' North, 108 ° 03 ' East) and for the Taimyr Peninsula on the whole, we have established two climatic types: tundra (10500 ±140 years BP– 7040 ± 60 years BP) and forest (5720± 60 years BP – 500 ± 60 years BP to the present time). In the first half of the Holocene the climate there was rather stable; only 7530 years ago a sharp cooling took place; the second half of the Holocene, beginning with 5720 years ago, is characterized by alternating fluctuations in the climate [3]. Taking only the palaeoclimatic reconstructions as a basis, we can talk about a trend of climatic changes in the future. However comparing the Sun activity' forecast, expressed in Wolf units (Max W), made by V.N. Kupetsky [1], with the climatic characteristics, which we have reconstructed, we could then make a more precise forecast of climatic changes for the Taimyr Peninsula and the Russian part of the Arctic (Table). The above forecast lets us make the following basically important conclusions: (1) the climate's warming, which is currently being observed on the Earth (the 23rd cycle of the Sun's activity) will last till 2011; (2) during the following two cycles (24th and 25th) the Sun's activity will decrease to 100–110 Wolf units, which will cause a cooling of the climate on the Earth; (3) in the following, the 26th cycle, the Sun's activity will increase up to 130 Wolf units, which will cause a warming of the climate; (4) in the 27th cycle (2037-2048) the Sun's activity will decrease to 100 Wolf units, causing a cooling on the Earth again. Thus, the forecast of climatic changes in the Arctic, which we have worked up and based on the Sun-Earth connections, is an objective natural reality. The climate fluctuations in the Arctic, which we have identified for the last 12-10 thousand years, will continue in the forthcoming 50-100 years. Consequently, only the synthesis of solar-telescopic, palaeoclimatic and modern meteorological data allows making a valid long-term global forecast of climatic changes and of the Earth's landscape in the future. Regional and local forecasts developed on the basis of a global forecast will be then of the primary value. Since the solar-telescopic data are alpha and omega for forecast constructions, their publication in the open press is an absolute necessity. This would enable scientists to make realistic forecasts of climatic changes for specific districts and regions of the Earth in the future. The contemporary scientific knowledge level does not show us any other way yet.

### Bibliography:

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