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## Environmental dynamics of the Baraba forest-steppe (Siberia) over the last 8000 years and their impact on the types of economic life of the population



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### ABSTRACT

This article offers a reconstruction of the vegetation and climate of the south-western Siberian Baraba forest-steppe area during the last ca. 8000 years. The analysis of palynological data from the sediment core of Lake Bolshie Toroki using quantitative methods has made it possible to reconstruct changes of the dominant types of vegetation and mean July air temperatures. Coniferous forests grew in the vicinity of the lake, and mean July air temperatures were similar to present-day ones between 7.9 and 7.0 kyr BP. The warmest and driest climate occurred at 7.0–5.0 kyr BP. At that time, the region had open steppe landscapes; birch groves began to spread. A cooling trend is seen after 5.5 kyr BP, when forest-steppe began to emerge. Steppe communities started to dominate again after 1.5 kyr BP. Mean July air temperatures lower than now are reconstructed for the period of 1.9–1 kyr BP, and then the temperatures became similar to present-day ones. Comparing the archaeological data on the types of economy of the population which inhabited the Baraba forest-steppe with the data on changes in the natural environment revealed a connection between the gradual transition from hunting and fishing to livestock breeding and the development of forest-steppe landscapes with a decrease in the area covered by forests. The development of the forest-steppe as an ecotonic landscape starting around 5 kyr BP might have contributed to the coexistence of several archaeological cultures with different types of economy on the same territory.

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### 1. Introduction

The southern part of Western Siberia is a major transit area connecting the Central Asian steppes and the North Asian taiga. Numerous well-studied archaeological sites of the Neolithic, Bronze Age, Iron Age, and the Middle Ages, such as Chicha, Tartas,

Vengerovo, Blizhnie Elbany, Irmen, Srostki, Pazyryk, etc., which are known throughout the world, are located in the region (Kiriyushin et al., 2010a,b; Molodin, 1977, 1985, 1988, 2012; Molodin et al., 2012; Polosmak, 1994, 2001, etc.). Multilayer archaeological sites from various periods (Chicha-1, Krokhalievka, Tartas-1, Preobrazhenka-6, etc.) have been discovered and studied in detail in the Baraba forest-steppe region of Western Siberia (Materialy "Svoda" ..., 1996; Arkheologicheskie pamyatniki ..., 2013).

The Holocene is the modern interglacial period nearest to our time and the best-studied not only in the history of the Earth, but also in human history. The Holocene environmental changes are well-reconstructable from high-resolution paleorecords by

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