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# Holocene Vegetation and Climate Dynamics in the Altai Mountains and Surrounding Areas

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## Abstract

©2018. American Geophysical Union. All Rights Reserved. A comprehensive understanding of the regional vegetation responses to long-term climate change will help to forecast Earth system dynamics. Based on a new well-dated pollen data set from Kanas Lake and a review on the published pollen records in and around the Altai Mountains, the regional vegetation dynamics and forcing mechanisms are discussed. In the Altai Mountains, the forest optimum occurred during 10–7 ka for the upper forest zone and the tree line decline and/or ecological shifts were caused by climatic cooling from around 7 ka. In the lower forest zone, the forest reached an optimum in the middle Holocene, and then increased openness of the forest, possibly caused by both climate cooling and human activities, took place in the late Holocene. In the lower basins or plains around the Altai Mountains, the development of protograssland or forest benefited from increasing humidity in the middle to late Holocene.

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## Keywords

Altai Mountains, climate change, Kanas Lake, taiga forest, vegetation dynamics

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