

Holocene alas formation in eastern Siberia

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Thermokarst formation, vegetation change and forest fire history in central Yakutia, eastern Siberia, were reconstructed based on stratigraphy, radiocarbon dates, and pollen records from thermokarst deposits. The radiocarbon ages of wood fragments from thermokarst lake deposits, which are good indicators of the development of thermokarst depressions, suggest that they formed during the early Holocene. The results of dating at various locations imply that thermokarst in central Yakutia developed synchronously at a time when regional paleoclimate records indicate warm and moist conditions prevailed. The major trends in pollen records from the four thermokarst lake deposits were similar. The predominant vegetation type during the thermokarst active phase was open larch forest with herbaceous taxa. Grassland developed on areas that were exposed by the decrease in the water levels of thermokarst lakes during the late Holocene, suggesting that the present-day landscape was established during the late Holocene.