

Fire activity in Japan influenced by spring temperature and vegetation type

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In Northeast Asia, the climatic effect on natural fire activity is poorly understood. We analyzed charcoal particles in Lake Biwa sediments, central Japan, deposited for 150,000 y to evaluate the climatic effect on fire activity. Between 130,000 and 40,000 y ago the charcoal concentration is mostly consistent with spring insolation on site driven by orbital forcing or the oxygen isotope ratio of worldwide marine sediments. Meanwhile, the variation of charcoal concentration related to vegetation change; the peak of the charcoal concentrations were in the periods with dominance of the conifer forest. This findings indicate that fire activity was controlled by spring temperature with the influence of vegetation type.

Keywords: fire activity, charcoal particle, spring temperature, spring insolation, vegetation type, Lake Biwa sediments