

Tree-line change since the Last Glacial from the pollen profile at the Hiroppara peat bog, central Japan

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To better understand the interaction between the human and environment in past period, this study reconstructed vegetation history and climate change since the late Pleistocene at the Hiroppara peat bog (1,400m a.s.l.), central Japan, from the pollen and micro-charcoal profiles at HB-1A cores. Arboreal pollen assemblages and influx of the cores indicated the vegetation history and climate change since the Last Glacial Maximum as follows; 1) ca. 30,000~19,000 cal BP, grassland and wasteland distributed due to decreasing the tree-line; 2) ca. 19,000 cal BP, around the site was covered with a mixed forest of boreal conifers and cool-temperate deciduous, because the tree-line passed the altitude of site; 3) ca. 16,000 cal BP, *Betula* forest expanded; 4) ca. 12,000 cal BP, a cool temperate deciduous broad-leaved forest consisting of *Quercus* subgen. *Lepidobalanus* and *Carpinus* was distributed; 5) ca. 4,000 cal BP, temperate conifer such as *Taxaceae-Cupressaceae*, *Tsuga*, and *Abies* increased; 6) secondary forest of *Pinus densiflora* and *Larix kaempferi* plantation increased in ca. 500 and 100 cal BP, respectively. It is highly possible that the tree-line change impacted strongly the human activities since the Last Glacial Maximum.

Keywords: pollen analysis, vegetation history, tree-line, obsidian, prehistoric age, central Japan