

## Radiocarbon dates of the Early Upper Palaeolithic and Environmental History during the MIS 3 in the Palaeo-Honshu Island

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Relationships between human activities and environmental changes have become an important research topic in the Japanese Palaeolithic archaeology. This presentation focuses on this topic with particular reference to the temporal correlation among climatic and archaeological records during the Marine Isotope Stage (MIS) 3 in the Palaeo-Honshu Island.

To show the general outline of the environmental history of the MIS 3 and MIS 2, climate history has been roughly divided into seven phases:

MIS 3 Stable Warm (ca. 60,000-44,000 cal BP)

MIS 3 Transition (ca. 44,000-38,000 cal BP)

MIS 3 Early Cold (ca. 38,000-28,000 cal BP)

MIS 2 LGM Cold-1 (ca. 28,000-24,000 cal BP)

MIS 2 LGM Cold-2 (ca. 24,000-15,000 cal BP)

MIS 2 LG Warm (ca. 15,000-13,000 cal BP)

MIS-2 LG Cold (ca. 13,000-11,500 cal BP)

Archaeological sites of the Early Upper Palaeolithic have been correlated with these climate phases, using calibrated radiocarbon dates by Intcal09.

### **MIS 3 Stable Warm and Transition (ca. 60,000-38,000 cal BP)**

These phases are placed early half of the MIS 3 in which relatively warm climate condition had been dominated in the Last Glacial. Around the Lake Nojiri at the central Honshu, fossil bones of the megafauna at the Tategahana site have been placed ca. 53,000-37,000 cal BP. Tategahana was interpreted as a kill and butchery site, however, the presence of the big game hunters is still uncertain. We have no reliable archaeological evidence of the Early or Middle Palaeolithic period (before 37,000 cal BP) in the Japanese archipelago.

### **MIS 3 Early Cold (ca. 38,000-28,000 cal BP)**

The earliest human occupations in the Palaeo-Honshu Island were characterized by trapezoid tools, blade tools, edge-ground stone tools, and circular settlements are found in Tachikawa Loam layer X and IX, at ca. 37,000-34,000 cal BP. Compiled radiocarbon dates of the Early Upper Palaeolithic sites were concentrated on ca. 37,000-30,000 cal BP, and they were almost coincided with the Early Cold phase (ca. 38,000-28,000 cal BP). The number of Palaeolithic sites increased suddenly after 37,000 cal BP. This event seems to coincide with the timing of the migration of *Homo sapiens* into the Japanese archipelago as many archaeologists pointed out.

The temporal placement of the lithic industry from Tachikawa Loam layer VII and VI, characterized by blade tools especially standardized backed blades, seem to be placed at 33,000-29,000 cal BP. It coincides with the second half of the Early Cold, however, climate had already become cold and dry condition same as the LGM Cold phase (28,000-24,000 cal BP).