

Holocene historical development of mass movement in the Utougi District, the upper Abe River basin, central Japan

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The Utougi area has long-term agricultural history of Japanese horseradish (*Wasabi*). This area is located on the middle flank of the Koma Mountains in central Japan. Unconsolidated thick gravelly deposits in the area showing terrace and fan-like topographies had been sequentially formed by the precede mudflow, the following large-scale rock slope failure, and the eventual debris flow events. According to chronological evidences given by ¹⁴C and in-situ terrestrial cosmogenic nuclide methods, these events of slope movement are thought to occur in the period from 6.0 to 3.8 cal ka BP. Megaquakes generated from the Suruga-Nankai submarine troughs south off central Japan are strong candidates for the causes of the events, despite the paucity of historical records and oral tradition. It can be said that the traditional cultivation of Japanese horseradish in the Utougi area has been established on the field formed by mass-movement in a steep mountain area. The Utougi area can provide a good opportunity for considering the relationship between geomorphic development and agricultural history in a montane village.

Keywords: slope changes, radiocarbon dating, in-situ cosmogenic nuclide exposure dating, mudflow, Trench-type megaquake