

## Fluvial terrace and geomorphology in the Shonai gawa (Toki gawa) river basin

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Many papers reported that Quaternary climate and sea-level fluctuations have controlled riverbed elevation in the river basins in the northeastern Japan (e.g., Koike and Machida, 2001; Takagi et al., 2000; Toyoshima, 1994). However, in the southwestern Japan, such climatic-controlled riverbed-elevation fluctuations have not been reported, except a few reports based on uncertain chronological data (e.g., Nogami et al., 1979; Ueki, 2008). In this research, we investigated fluvial terraces along the Shonai gawa (Toki gawa) river that flows through the low relief mountainous areas in the northernmost part of the Mikawa Highland, southwestern Japan, and examined whether riverbed fluctuations similar to these in rivers in the northeastern Japan occurred in the Shonai gawa river basin. We mapped fluvial terraces based on air photo analysis, and inferred the age and climate at the time of formation of these terraces based on <sup>14</sup>C dating, tephra analysis, and pollen analysis. Based on results of these analyses, we concluded that the fluvial terraces in the Shonai gawa river basin have been formed in consequence of the riverbed fluctuation linked to the climate change. We estimated uplift rates in the Shonai gawa river basin at 10-20 m based on elevation of the fluvial terraces. These uplift rates are almost constant over the entire basin. Increase of the uplift rates which expected from the tilting movement of the Nobi Basin (Kuwahara, 1968; Sugai, 2001) is not recognized in the middle to upper reach of the Shonai gawa river basin. This inconsistency could be interpreted by following two reasons; 1) incision of the Shonai gawa river have not caught up with the uplift in this area, 2) the tilting movement have been diminished during recent 150 kyrs.