

SSS032-07

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Coseismic subsidence recorded in the Holocene of the Nobi plain and activity of the Yoro fault system

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The Nobi plain has been tilting down toward the west, subsiding at mean rates of 1 m/kyr, as the result of faulting on the Yoro fault system, fringing the margin of the plain (Sugai and Sugiyama, 1999).

The upper Holocene of the Nobi plain is represented by a prograding delta sequence formed on the footwall side of the Yoro fault system. On the basis of analyses of six drilling cores and 46 ¹⁴C ages from the Nobi plain, vertical changes of sedimentary facies, grain size distribution and Electronic Conductivity (EC) value of sediment samples suggest that temporal relative sea-level rise occurred around 500, 1200, 1000 to 4300, 4000, and 4700 to 5600 years ago (Niwa et al., 2009; 2010). Niwa et al. (in press) also detected river channel change to west and temporal relative sea-level rise about 1600 to 2700 years ago based on analyses of uppermost Holocene sequence of the Nobi plain and 35 ¹⁴C ages. Synchronicity of events and trend of relative-sea level lowering during middle to late Holocene to the influence of eustasy and hydroisostasy indicates that cause of these relative sea-level rise events can be coseismic subsidence along the Yoro fault.

The above-mentioned subsidence events broadly correspond with previously known faulting events at the Kuwana fault to the south of the Yoro fault. These results are consistent with the notion that the Yoro and Kuwana faults comprise a behavioral segment in the Yoro fault system (Sugai et al., 1999).

References

Niwa et al. (2009) *The Quaternary Research (Japan)*, 48, 339 ? 349.

Niwa et al. (2010) *Journal of Geography*, 119, 668 ? 682.

Niwa et al. (in press) *Transactions, Japanese Geomorphological Union*.

Sugai and Sugiyama (1999) *Geological Survey of Japan Interim Report, EQ/99/3*, 69 ? 76.

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Keywords: Holocene, coseismic subsidence, Nobi plain, Yoro fault system, ¹⁴C age