

Methods for land-level reconstruction

The height estimates in this paper are based on the modern analogs and transfer functions of Sawai et al. (2004).

The modern analogs consist of diatom assemblages from the surface sediments of nearly pristine parts of eastern Hokkaido's estuaries (Sawai et al., 2004). These assemblages show vertical zonation confirmed by canonical correspondence analysis. Individual species further show a single peak in abundance relative to other taxa with respect to heights referenced to mean tide level. The distributional peak and their standard deviations of each species can therefore be represented, respectively, by the two-sigma range in elevation and by the modal height.

These distributional peaks and their standard deviations of each diatom species can be used to derive a transfer function that relates the abundance of a diatom species to elevation relative to tides. To derive the functions we used the C2 software of Juggins (2003). We checked their performance in modern environments by using the root-mean square error of prediction and the squared correlation between observed and predicted values.

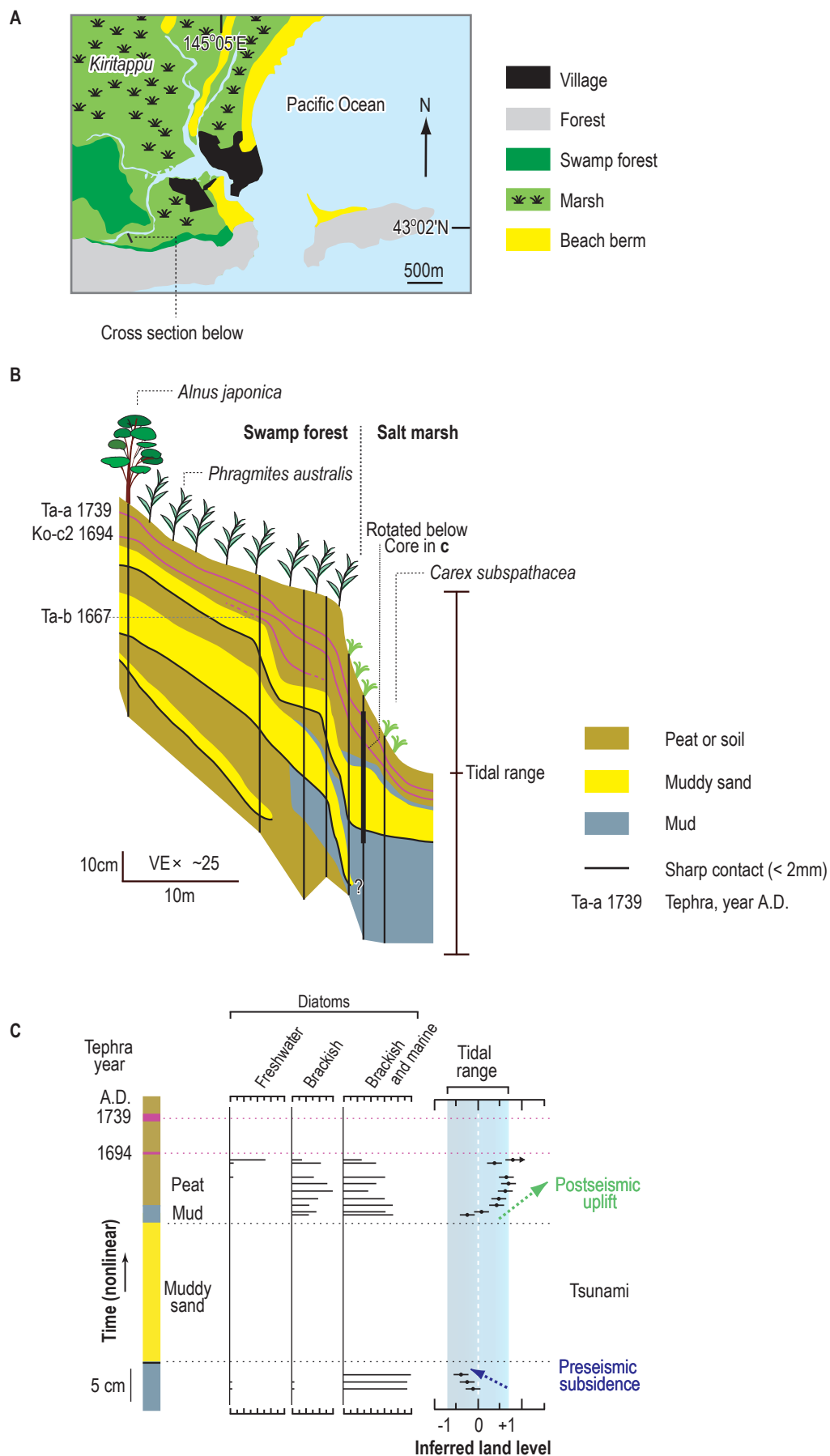


Fig. S1. Evidence of postseismic coastal uplift following the 17th-century earthquake at Kiritappu. (A) Index map. (B) Stratigraphic cross-section. (C) Inferred land-level changes based on diatom assemblages in the sediment samples.

References cited in Supporting Online Materials

- Juggins, S., 2003. C2: Software for ecological and palaeoecological data analysis and visualisation. Department of Geography, University of New Castle.
- Sawai, Y., Horton, B.P., Nagumo, T., 2004. Diatom-based elevation transfer function along the Pacific coast of eastern Hokkaido, northern Japan – an aid in paleo-seismic study along the coasts near Kurile subduction zone. *Quaternary Science Reviews*
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