

## **A 400 year record of relative sea-level change associated with interplate earthquakes in Hokkaido, Japan**

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Characterising patterns of earth motion (uplift and subsidence) associated with great earthquakes is an important first step for assessing seismic hazard. Research using intertidal sediments in eastern Hokkaido (Japan) provides evidence for repeated emergence events over the mid to late Holocene, which have recently been attributed to land movements associated with interplate earthquakes at the Kuril subduction zone. Litho-, bio-, and chronostratigraphical techniques are used to quantify land movements along the coast of eastern Hokkaido to improve our understanding of past earthquakes in this region.

A critical first step of using such quantitative predictions (e.g. transfer functions), is to assess the extent to which a high-resolution fossil core may reveal decadal changes in sea-level as shown in a tidal gauge record. Two long tidal gauge records spanning 100 years are available on the eastern Hokkaido coastline, at Hanasaki and Kushiro which record interseismic subsidence. Biostratigraphical analysis was undertaken on three transects at Mochiruppu to investigate intrasite differences in microfossil assemblage composition and transfer function development. The transfer functions were then applied to a short fossil core at Mochiruppu, and the tide-gauge record used to validate the reconstructions.