

## Tropical western Pacific hydrology during the last 6000 years based on charcoal records from Borneo

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Tropical western Pacific region is a heat source of Earth's surface and potentially plays a major role in global climate change. Precipitation in Borneo is controlled by both El Niño-Southern Oscillation and the East Asian winter monsoon associated with latitudinal migration of the intertropical convergence zone. In this study, we generated a 6200-year long charcoal record from three different sites in northwestern Borneo that shows large fluctuation in charcoal abundance. Two different sites at 460 km distance show common abundance peaks, suggesting that climate change regulated wild fire frequency. The abundance peak appeared every several hundred years, showing a 560-year periodicity. The peaks correspond well to those of the frequency of El Niño-induced flooding in an Ecuadorian lake (Moy et al., 2002) from 4000 to 1500 year BP, but the correspondence is not significant in other periods. There is no clear correspondence with the East Asian summer and winter monsoon records. We suggest that multi-centennial scale changes in the frequency of El Niño was a factor controlling precipitation in northwestern Borneo and the frequency of wildfires in the peatlands.

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