



Figure S1. (a) The relationship between Petorca river reconstruction and El Niño 3.4 index from May to September months during 1870–2015 period. Pearson correlation value between both variables ($r = 0.30$) present statistical significance at $P < 0.001$. **(b)** Moving Pearson correlation between the same variables at panel (a), but using blocks of 5 and 7 years. Significant correlations values at $P < 0.05$ are indicated by respective color dashed lines. A vertical rectangle is added to represent the mega-drought interval.