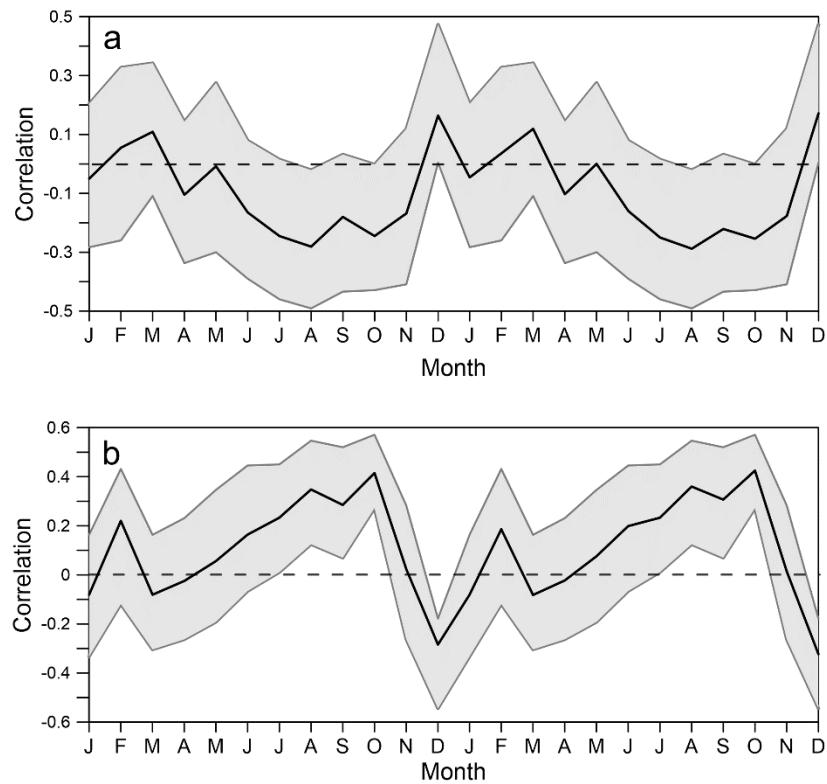


Pacific climate reflected in Waipuna Cave dripwater hydrochemistry

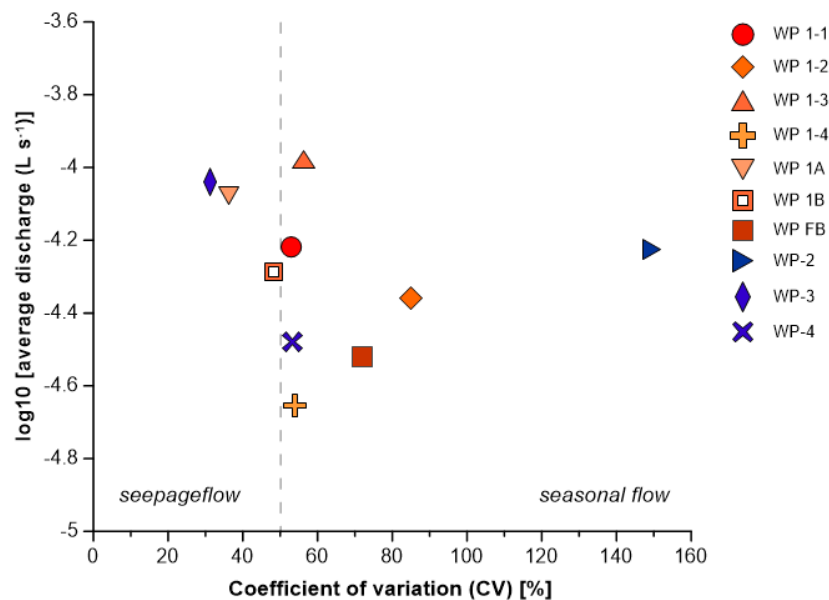
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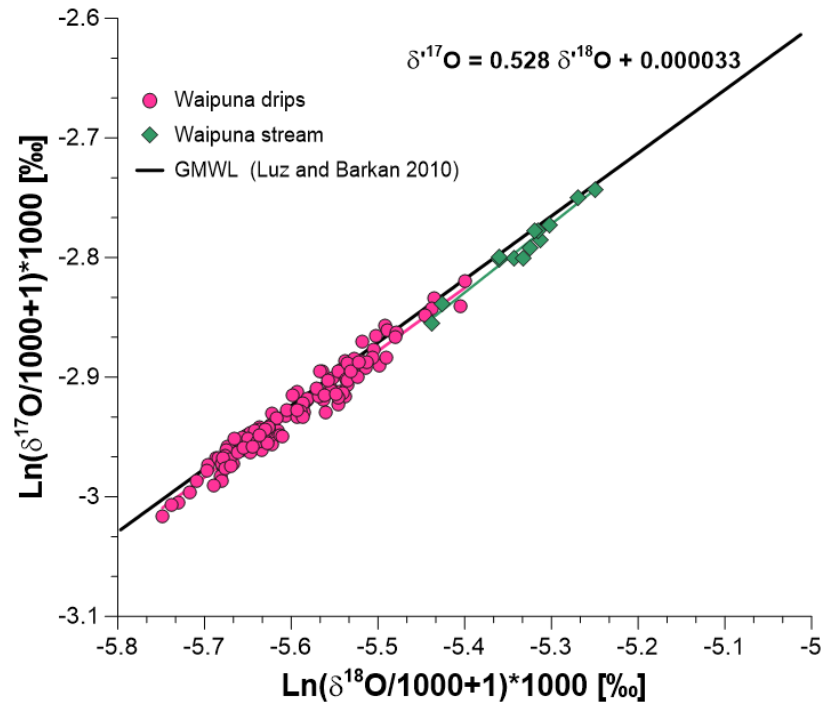
S1. Time series correlations of a) New Plymouth rainfall anomalies vs Nino3.4 1951-2004 and b) New Plymouth rainfall anomalies vs SOI 1951- 2004 (<https://climexp.knmi.nl/start.cgi>).



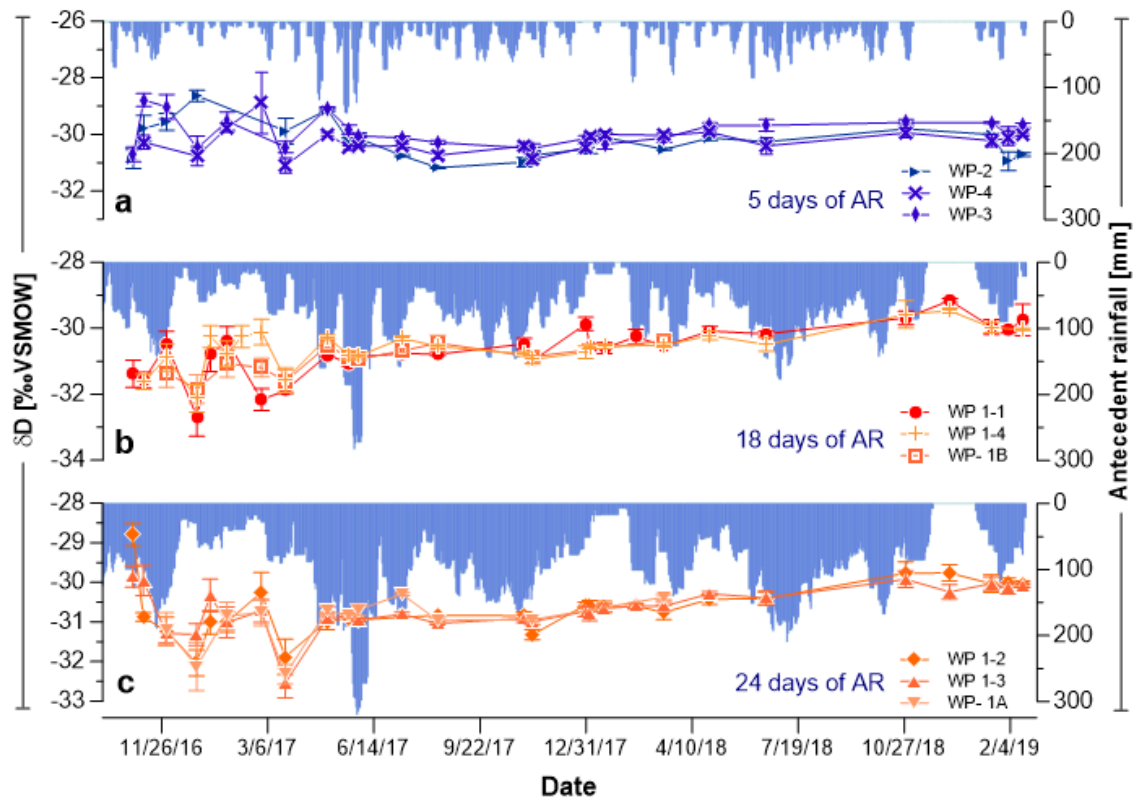
S2. Waipuna Cave drip sites organized by their discharge variability according to the classification of Smart and Friederich 1987.



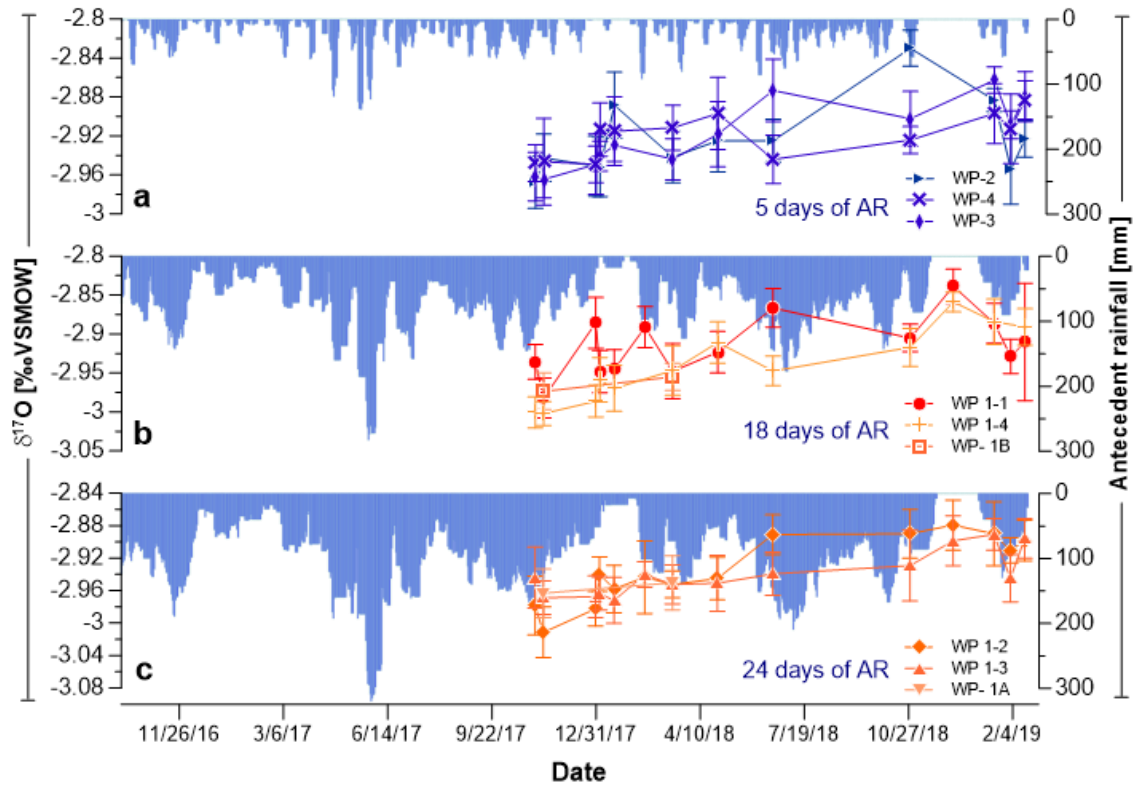
S3. $\delta^{17}\text{O}$ versus $\delta^{18}\text{O}$ values of Waipuna Cave dripwaters (pink circles) and Waipuna stream (green diamonds).



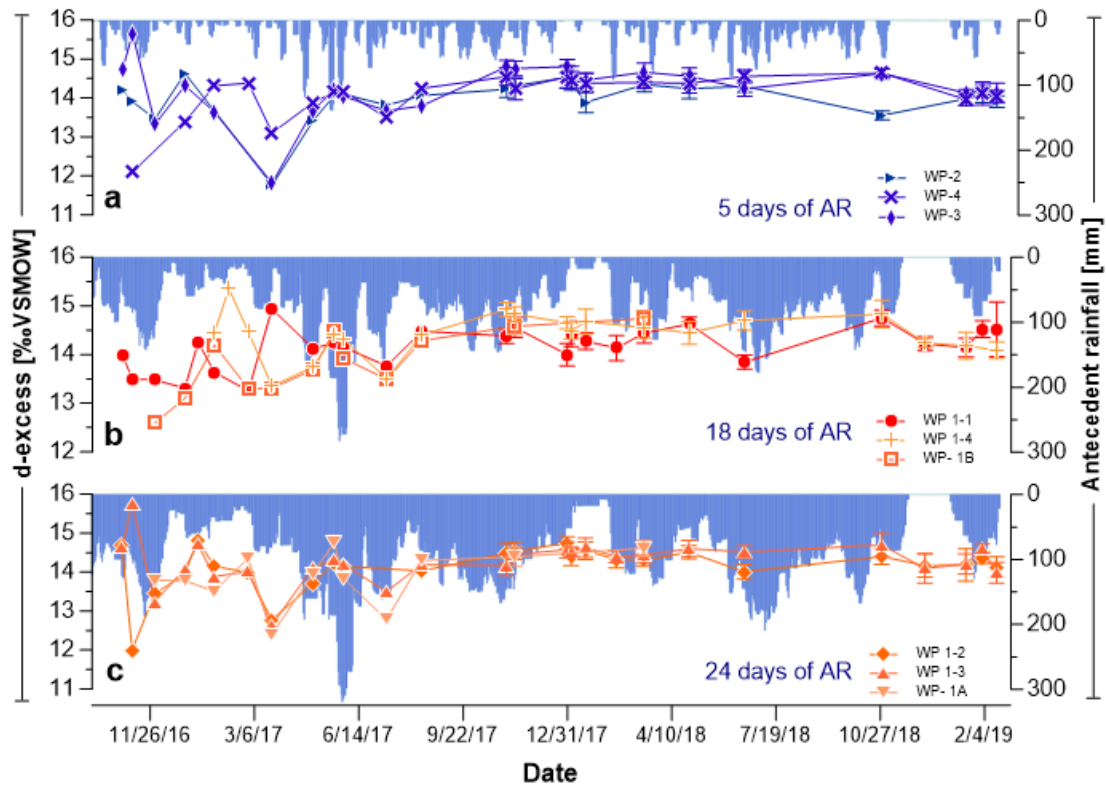
S4. Dripwater δD time series of all drips grouped according to the three main response lags (5, 18, and 24 days) to antecedent rainfall (AR) at Otorohanga Glenbrook station (blue vertical bars).



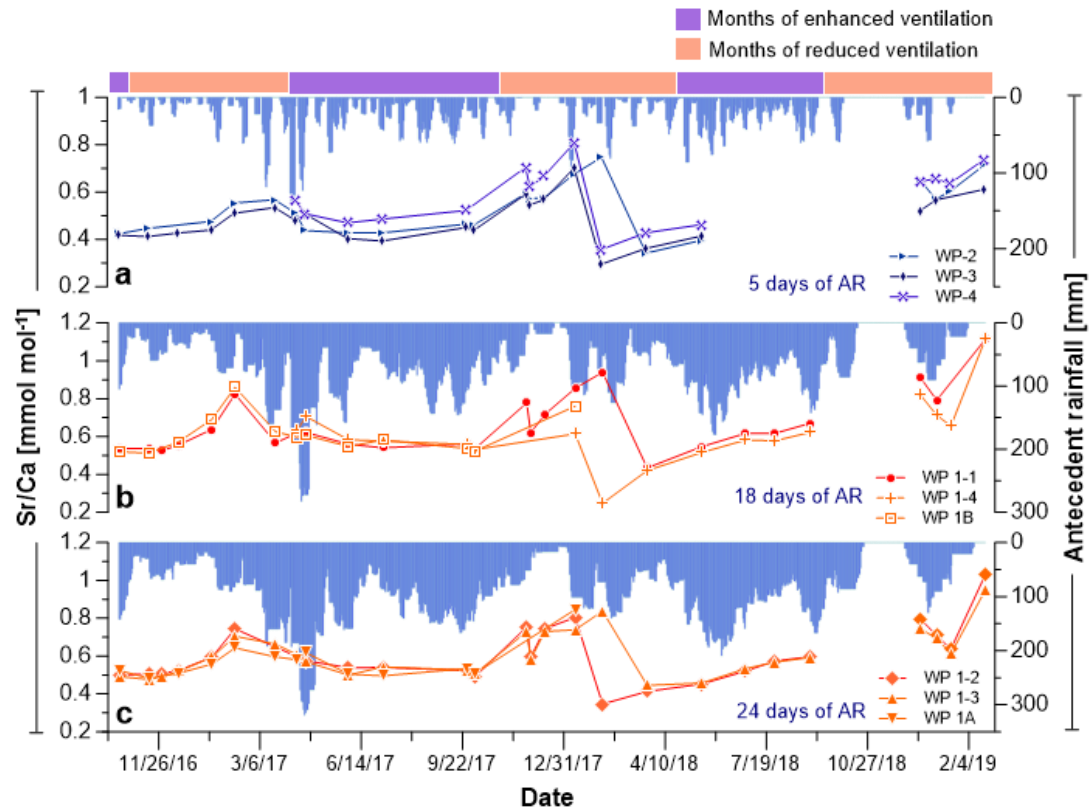
S5. Dripwater $\delta^{17}\text{O}$ time series of all drips grouped according to the three main response lags (5, 18, and 24 days) to antecedent rainfall (AR) at Otorohanga Glenbrook station (blue vertical bars).



S6. Dripwater d-excess of all drips grouped according to the three main response lags (5, 18, and 24 days) to antecedent rainfall (AR) at Otorohanga Glenbrook station (blue vertical bars).



S7. Dripwater Sr/Ca ratios of all drips grouped according to the three main response lags (5, 18, and 24 days) to antecedent rainfall (AR) at Otorohanga Glenbrook station (blue vertical bars).



S8. Mg/Ca and Sr/Ca ratios sorted by the period of reduced ventilation November-March (orange circles) and enhanced ventilation April-October (blue diamonds), showing the importance of water supply on elemental dynamics, and minimal influence of ventilation regime on PCP strength. The secondary group of blue samples following a lower slope are related to post-La Niña samples that received above-normal water supply and indicate reduced PCP above the cave.

