

Supplementary Material  
For

Abella-Gutiérrez, J., Touchan, R., Boehm, J., Bolles, K., Treviño, A.M., Swarts, K., Uliana, L., Meko, D.M., 2021. Oceanic influence on Chiricahua Mountains drought observed in a 383-year Douglas-fir reconstruction. *Tree-Ring Research* 77(2):63-73.

**This PDF includes:**

Supplemental Table S1

Supplemental Figures S1-S7

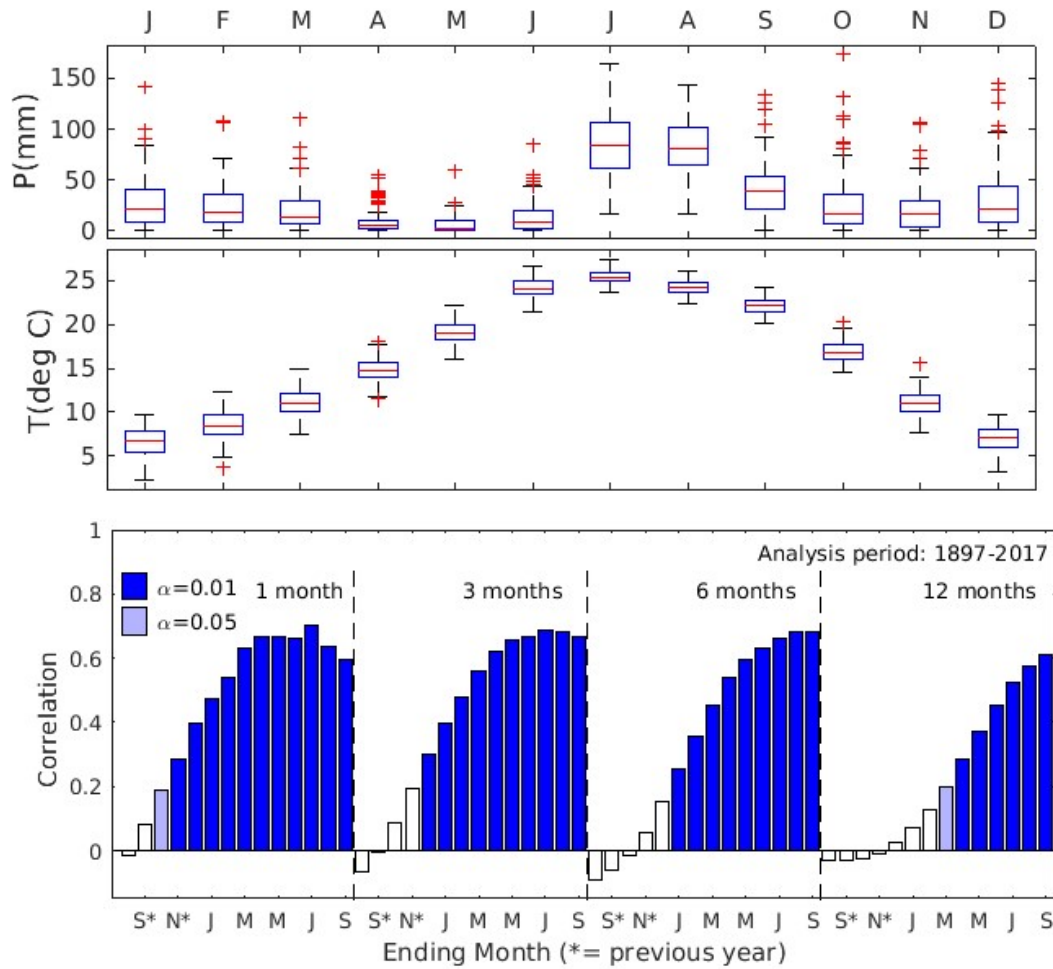


Figure S1. Top, Climograph of the Chiricahua Mountains from PRISM data. Bottom, Seascorr summary of PDSI signal in the residual chronology data; correlation of tree-ring variable with monthly, 3-month, 6 month, and 12-month PDSI for ending months from August preceding year to September of the current year.

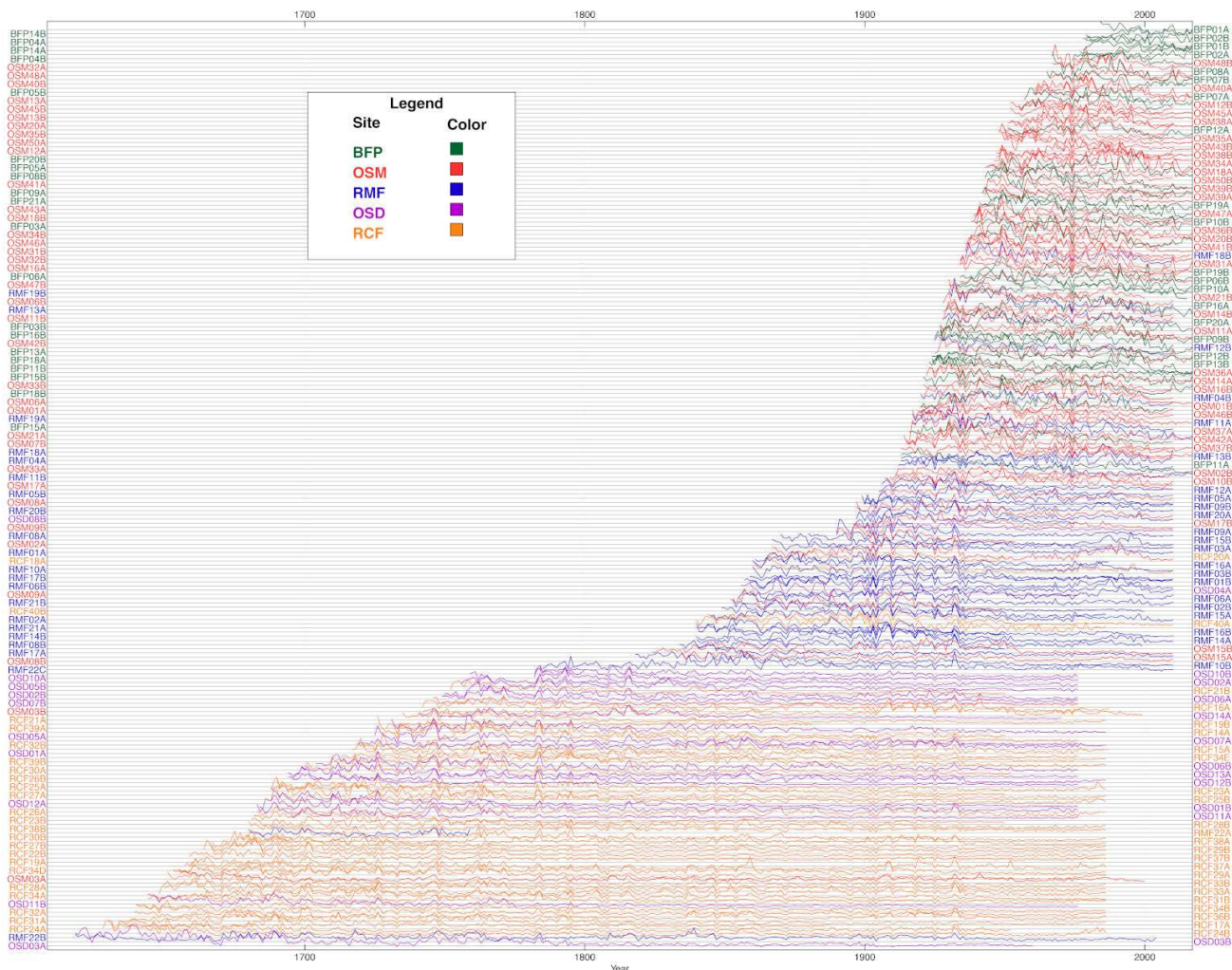


Figure S2. Time series of the tree-ring width from all cores used in this study. Colors indicate different sites and years of sampling; Onion Saddle Mountain (OSM and OSD), Rhyolite Canyon (RCM and RMF), and Barfoot Park (BFP).

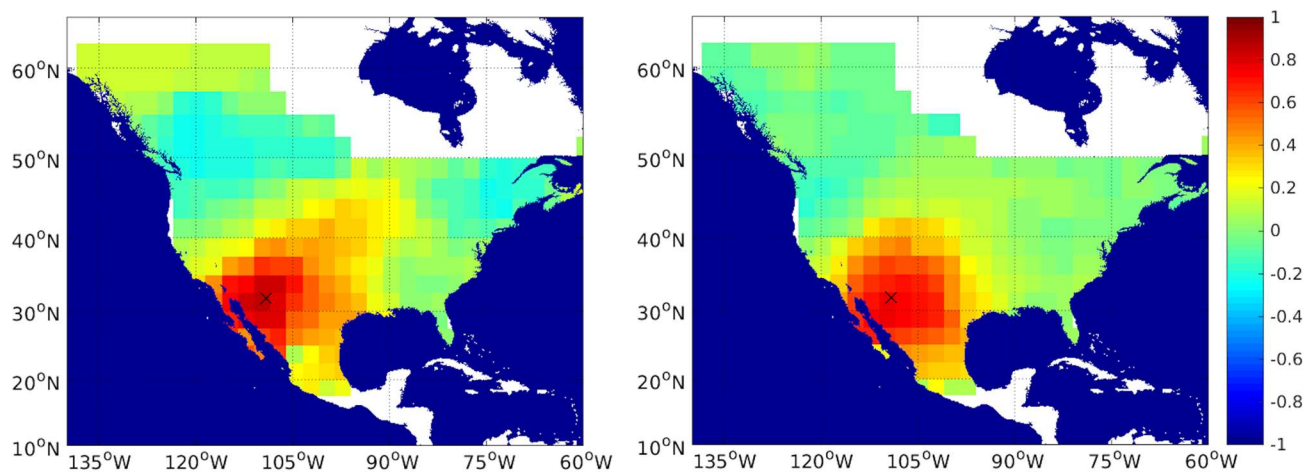


Figure S3. Correlation maps between Chiricahua PDSI and North America PDSI. Left, correlation of the MMJ-PDSI and the PRISM instrumental Drought Atlas. Right, correlation of the Chiricahua MJJ-PDSI reconstruction and the tree-ring based North America Drought Atlas (Cook *et al.*, 2010).

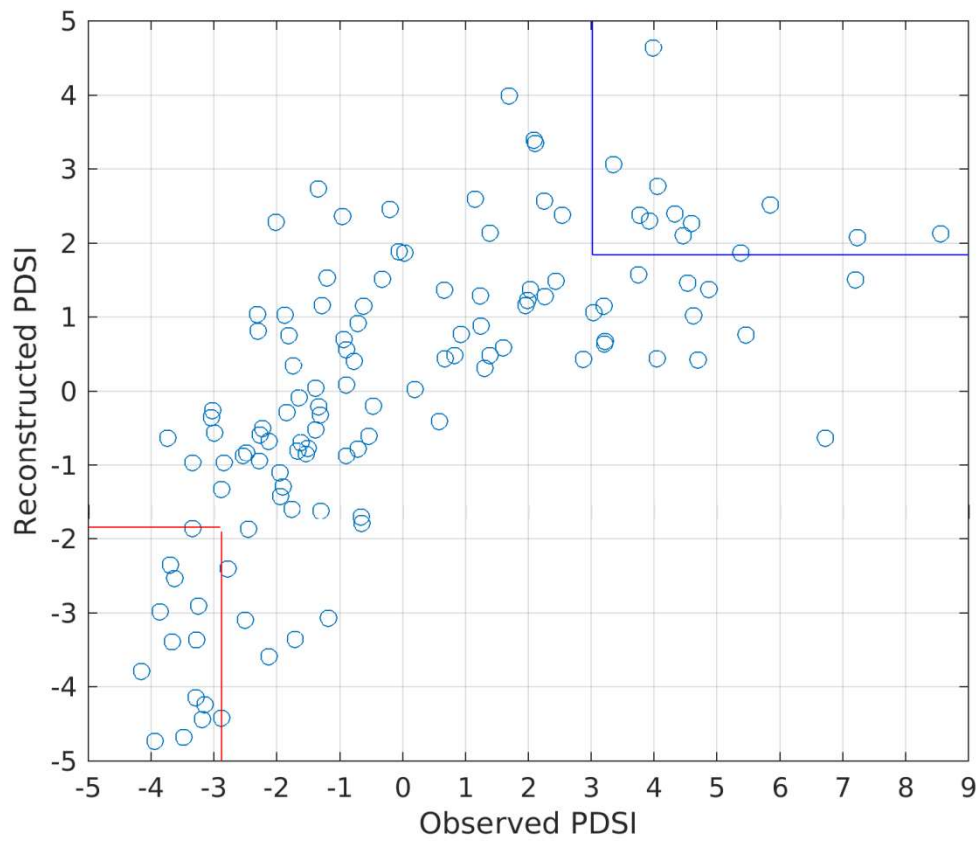


Figure S4. Scatterplot of observed and reconstructed MJJ-PDSI. Lines delineate the selected threshold: percentile 16<sup>th</sup> for drought (red), and percentile 20<sup>th</sup> for the wet threshold (blue).

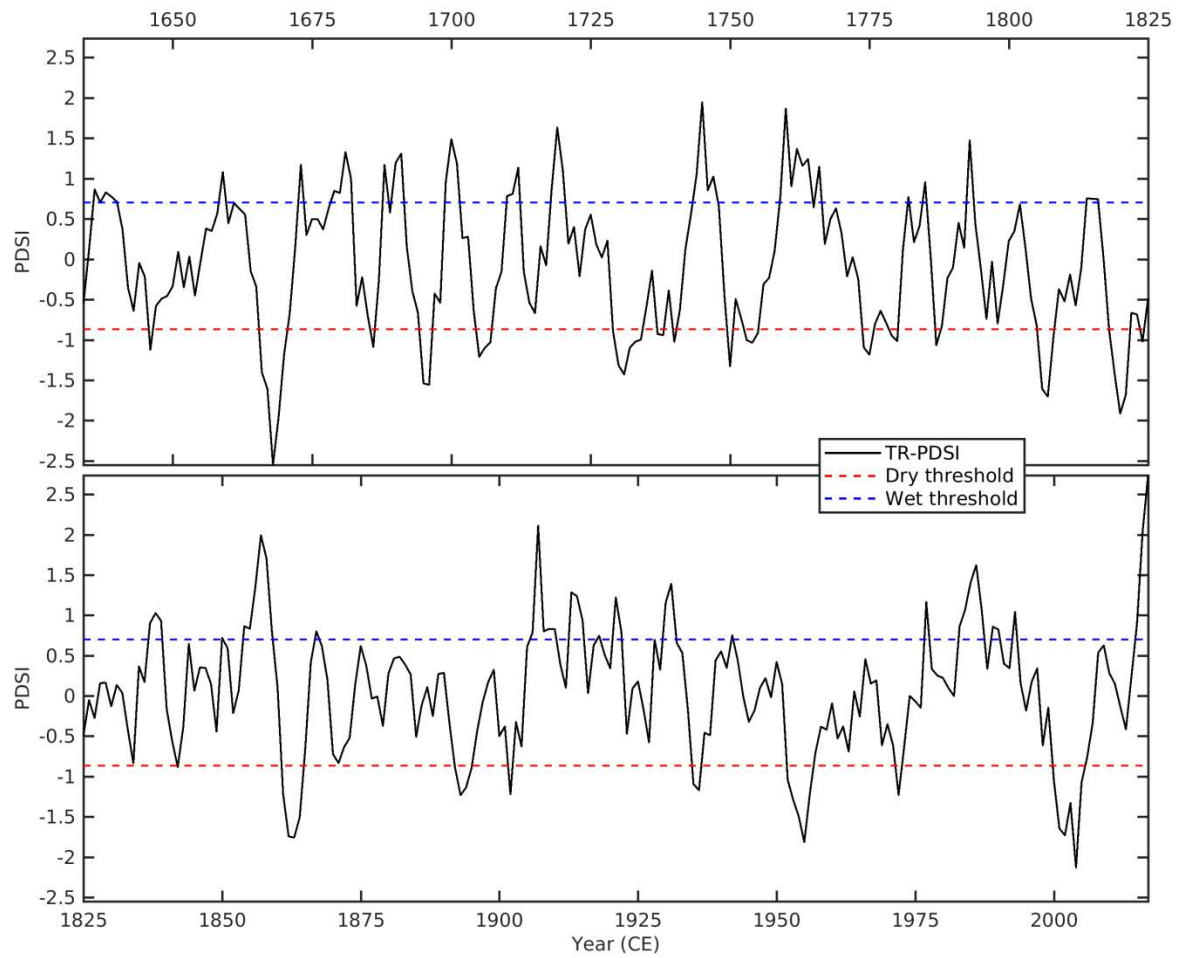


Figure S5. 5-year moving average of MJJ-PDSI tree ring reconstruction in black. Dashed red and blue lines indicate the selected dry (16<sup>th</sup> percentile of the smoothed series) and wet (20<sup>th</sup> percentile of the smoothed series) threshold respectively.



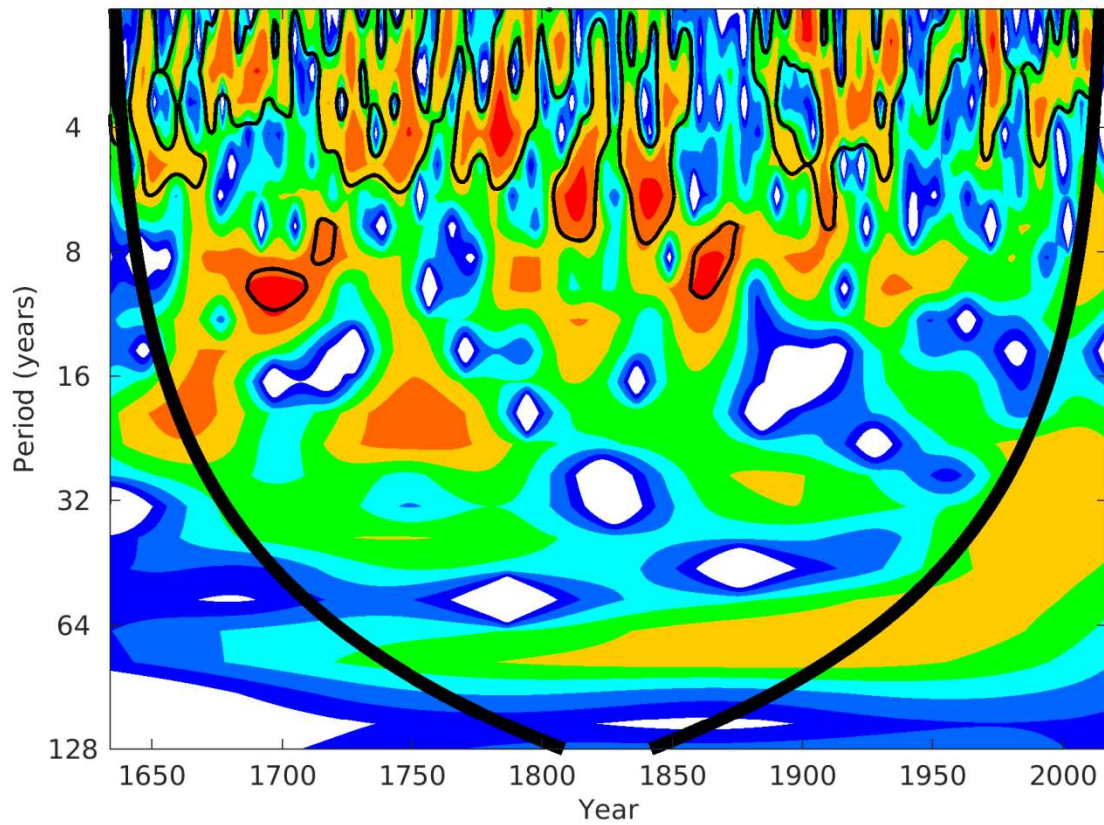


Figure S6. Wavelet analysis of the MJJ PDSI tree-ring reconstruction; color indicates the power, with cold color indicating low power and warm color high power. Black contour lines indicate significant power, and the black thick line is the cone of influence.

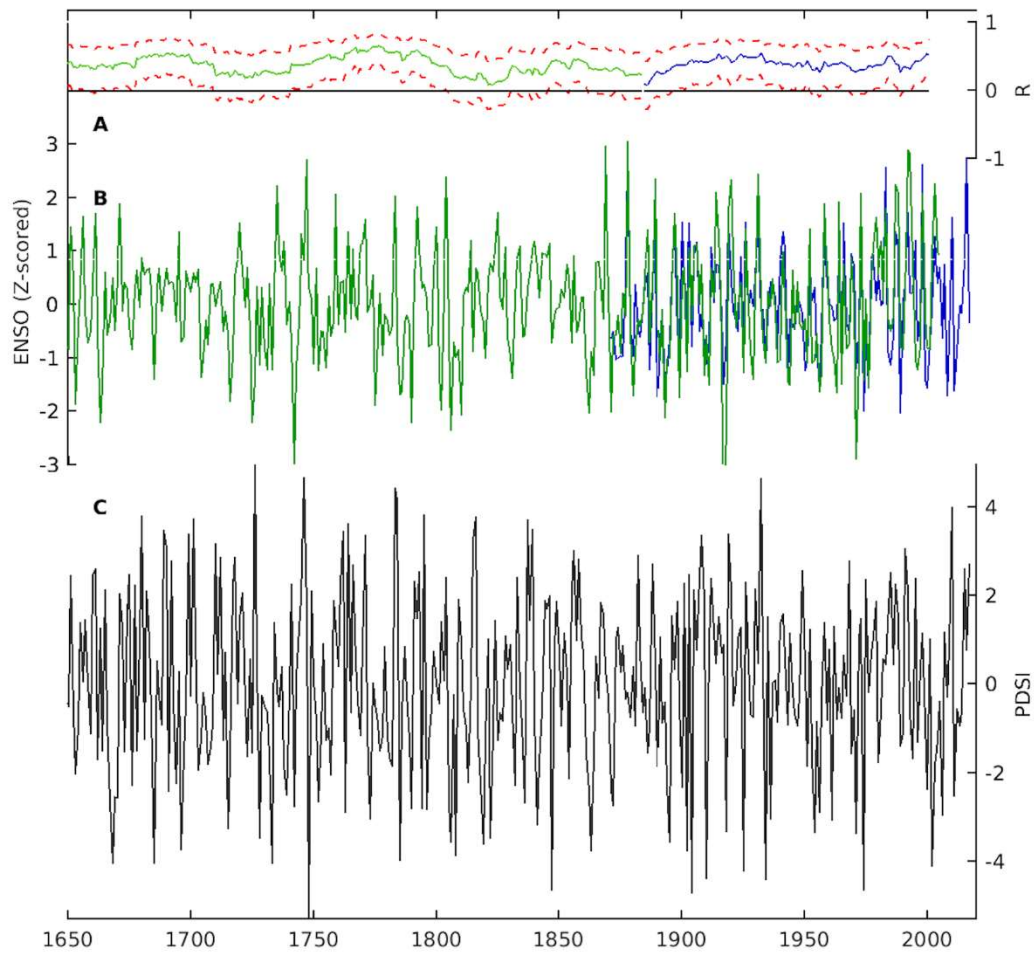


Figure S7 A) Thirty-year running correlation of PDSI reconstruction with instrumental and reconstructed ENSO; R in continuous lines (blue for the comparison with winter-NINO3.4 index and green with the tree-ring based reconstruction – Li *et al.*, 2013), and 95% confidence interval in red dashed lines. B) NINO3.4 (blue) and tree-ring reconstructed ENSO (green – Li *et al.* 2013 ). C) Chiricahua PDSI reconstruction (black).



Table S1. Location of the sampling sites and the number of samples.

Site name	Elevation (m)	Latitude	Longitude	Time span	Total years	Number of trees	Number of cores
Barfoot Park	2477	31° 55'	109° 16'	1913-2017	105	20	39
Onion Saddle Mountain	2334	31° 55'	109° 15'	1608-2017	409	70	135
Rhyolite Canyon	1828	31° 59'	109° 19'	1618-2010	393	26	46