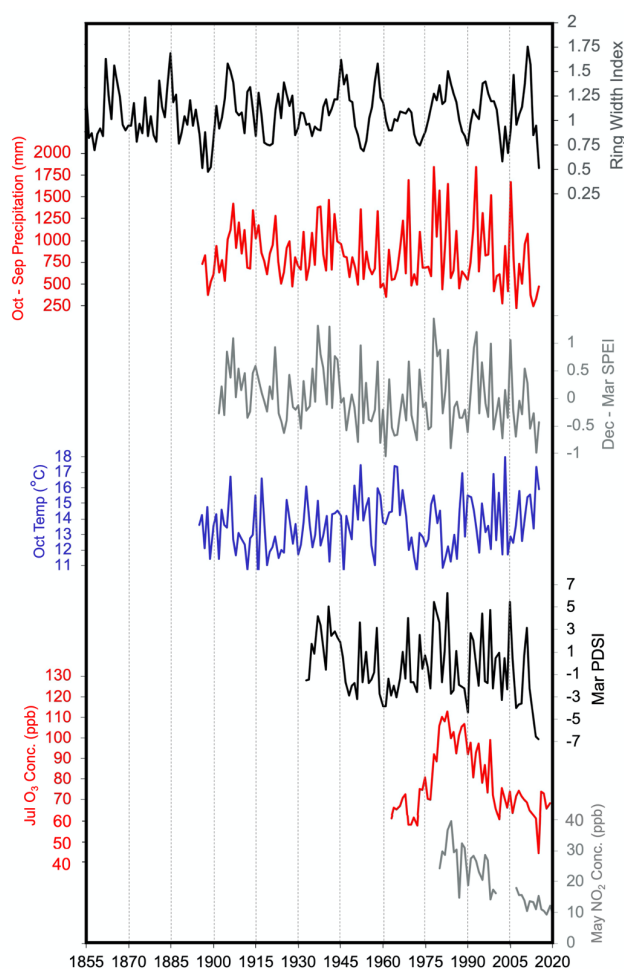


Air Pollution and Climate Drive Annual Growth in Ponderosa Pine Trees in Southern California

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Supplementary Figure S1. Stacked Time Series plots of selected datasets examined in this study including (from top to bottom) the Crestline Tree Ring Chronology (this study), Total Water Year Precipitation (Oct-Sep), Average Dec-Mar Standardized Precipitation and Evapotranspiration Index (SPEI), Average October Temperature, Average March Palmer Drought Severity Index (PDSI), Average Daily Concentration of Ozone during the month of July, Average Daily Concentration of Nitrogen Dioxide (NO₂) during the month of May. Time periods are selected based on statistically significant ($p < 0.05$) correlation with the tree ring chronology as reported in Table 2 and Figure 4. Precipitation and Temperature data obtained from the Parameter-elevation regressions on independent slopes model (PRISM, [31]) from 1895-2015. Standardized Precipitation Evapotranspiration Index (SPEI, [32], [33]) available over the study site from 1901-2015. Palmer Drought Severity Index Data [35] are spatially resolved at $2.5^\circ \times 2.5^\circ$ (lat: 34.25°N , lon: 117.25°N)

and are used from 1933-2015. Ozone and Nitrogen Dioxide data available from EPA's Air Quality System database [49] from 1963-2020 and 1980-2020 (data missing from 2002-2006), respectively.