Supplemental Material
Contribution of cut-off lows to precipitation across the United States

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The supplemental materials consists of four figures referred to in the text, but not emphasized as part of the main results.

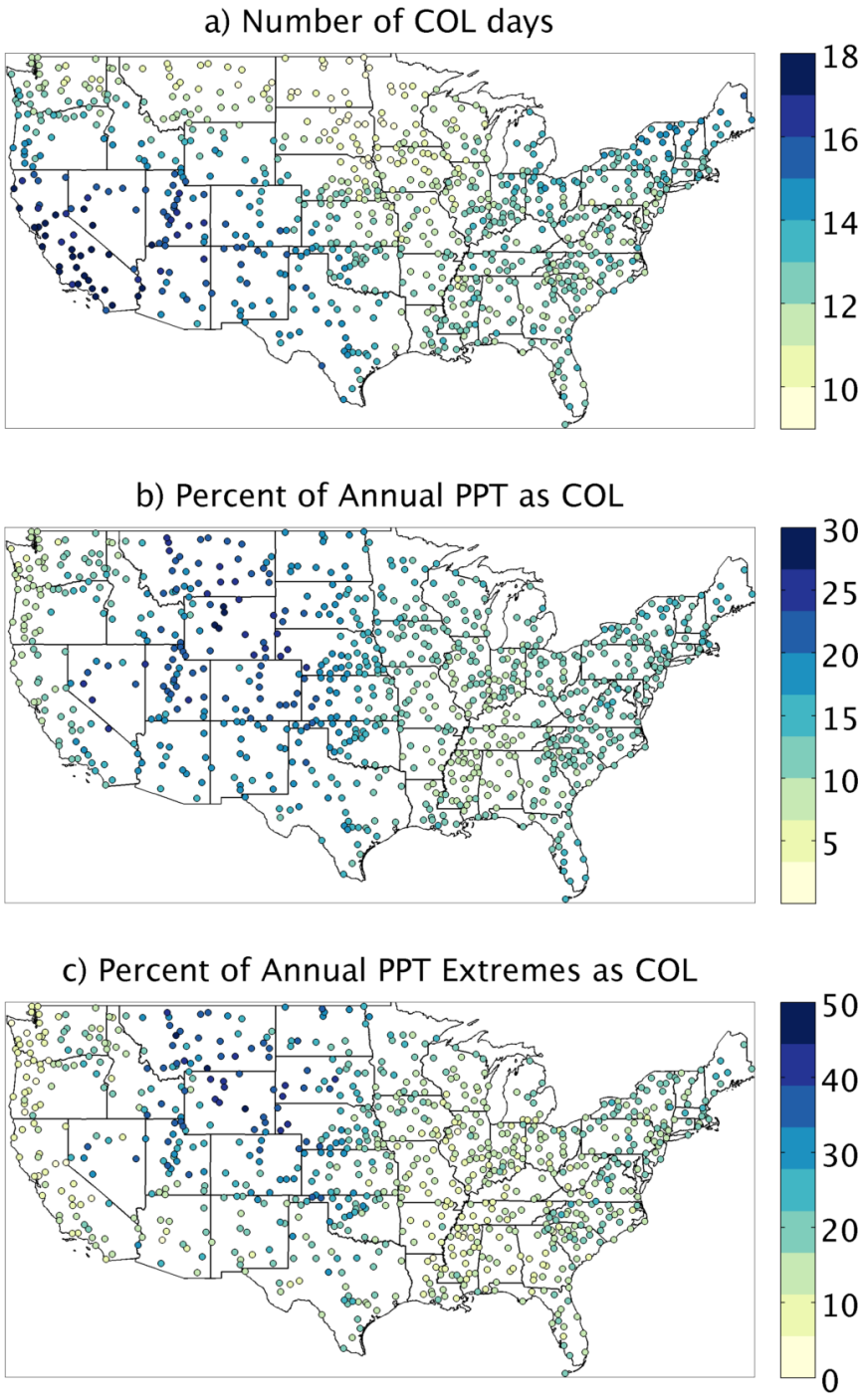

Figure S1: (a) Number of days per year with a COL within 660-km of each station averaged from 1979-2014. Percent of annual (b) precipitation, and (c) 3-day precipitation extremes attributed to COL.

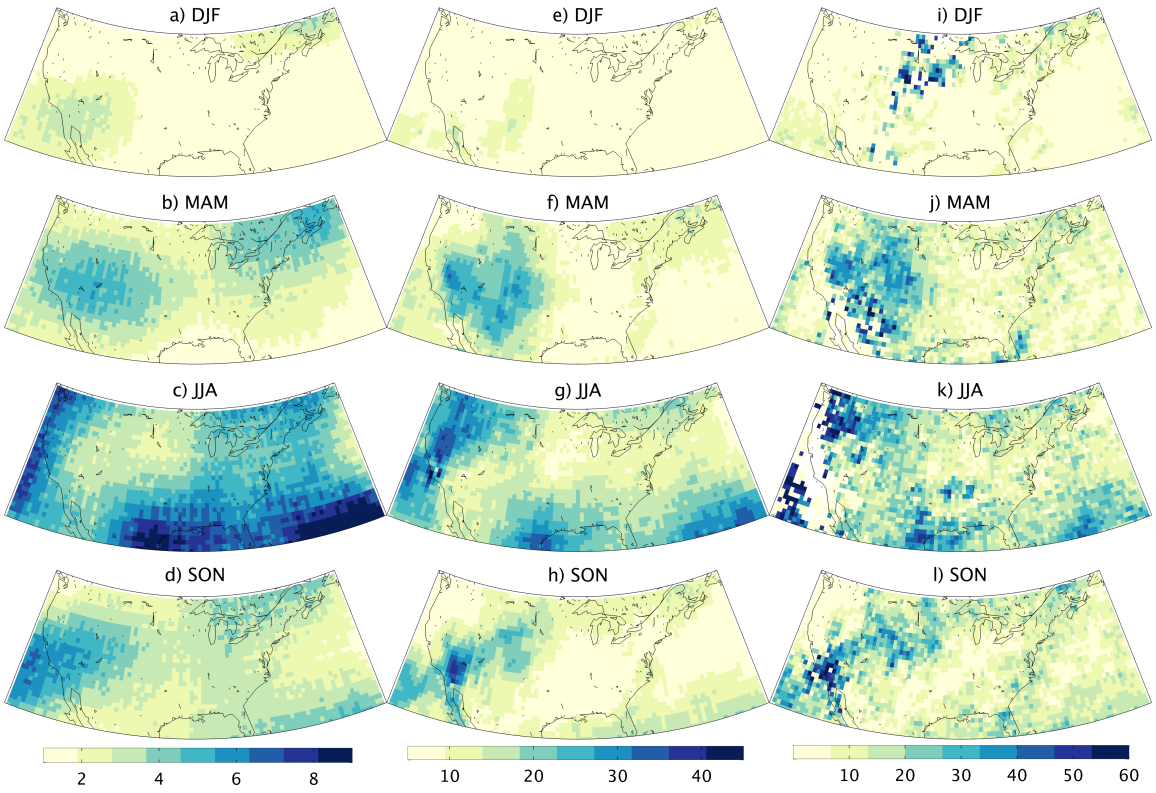

Figure S2: As in Figure 1 of the main text but using ERA-Interim daily precipitation; (a-d) Average number of days per season with COL within 660-km radius; (e-h) Percent of seasonal precipitation occurring within +/- 1 day and 660-km radius of identified COL; (i-l) Percent of 3-day precipitation extremes concurrent with COL, stations that did not experience extremes during a given season are omitted. Maps are provided for DJF, MAM, JJA and SON (top to bottom).

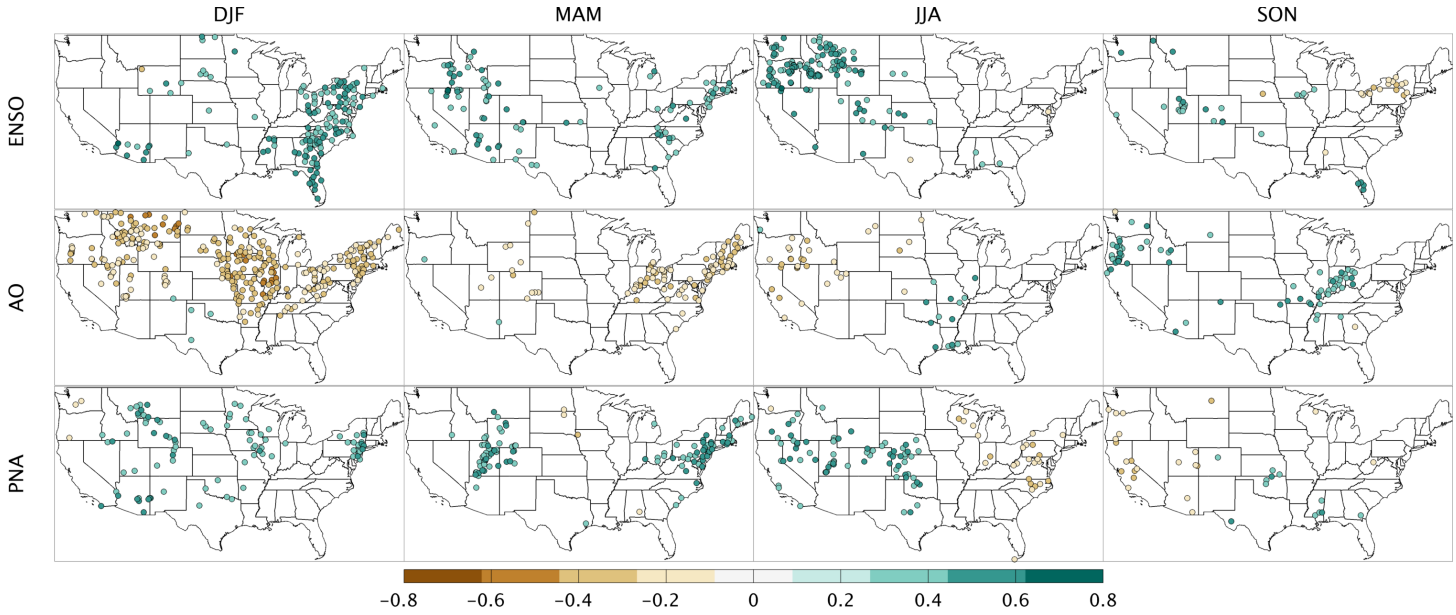

Figure S3: Seasonal Pearson's correlation coefficients between COL precipitation and concurrent climate indices for El Nino-Southern Oscillation (ENSO), using the Multivariate ENSO Index, the Arctic Oscillation (AO) the Pacific North American (PNA) pattern from NOAA's Climate Prediction Center. Only statistically significant ($p<0.05$) are shown.

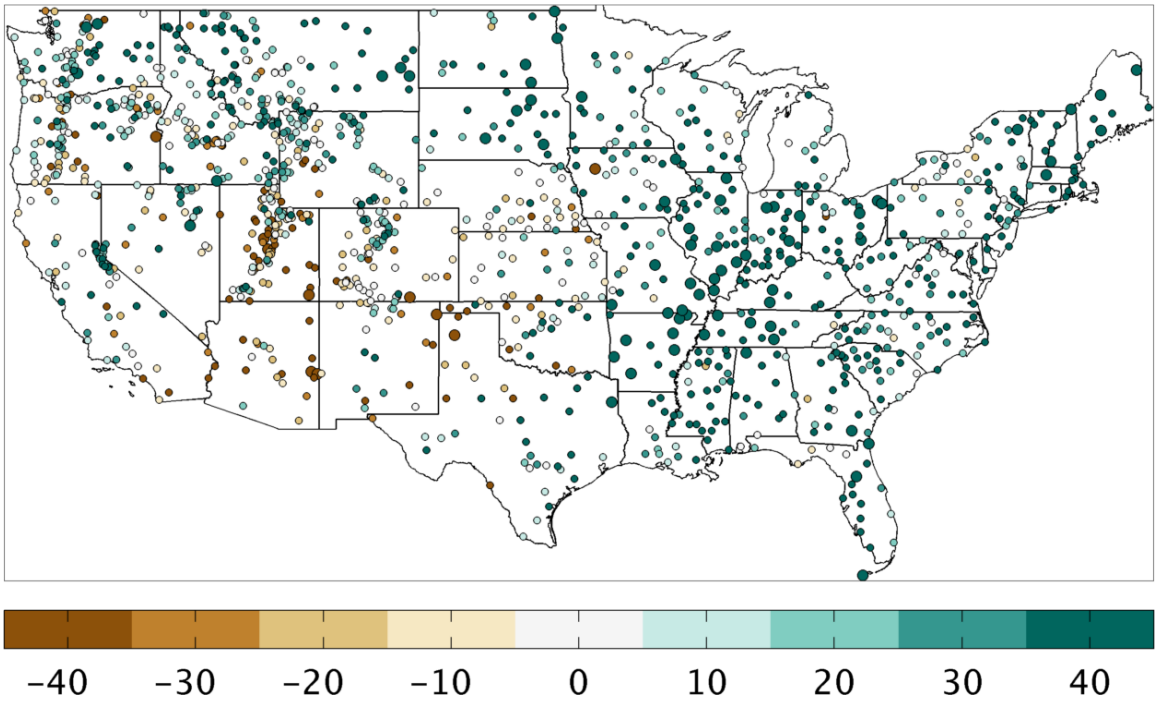

Figure S4: Linear trend in annual COL precipitation from (1979-2014). Trend is expressed as a percent change over the 36 year record. Statistically significant ($p<0.05$) trends are shown by large symbols.