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Supplement of

Convective suppression before and during the United States Northern Great Plains flash drought of 2017

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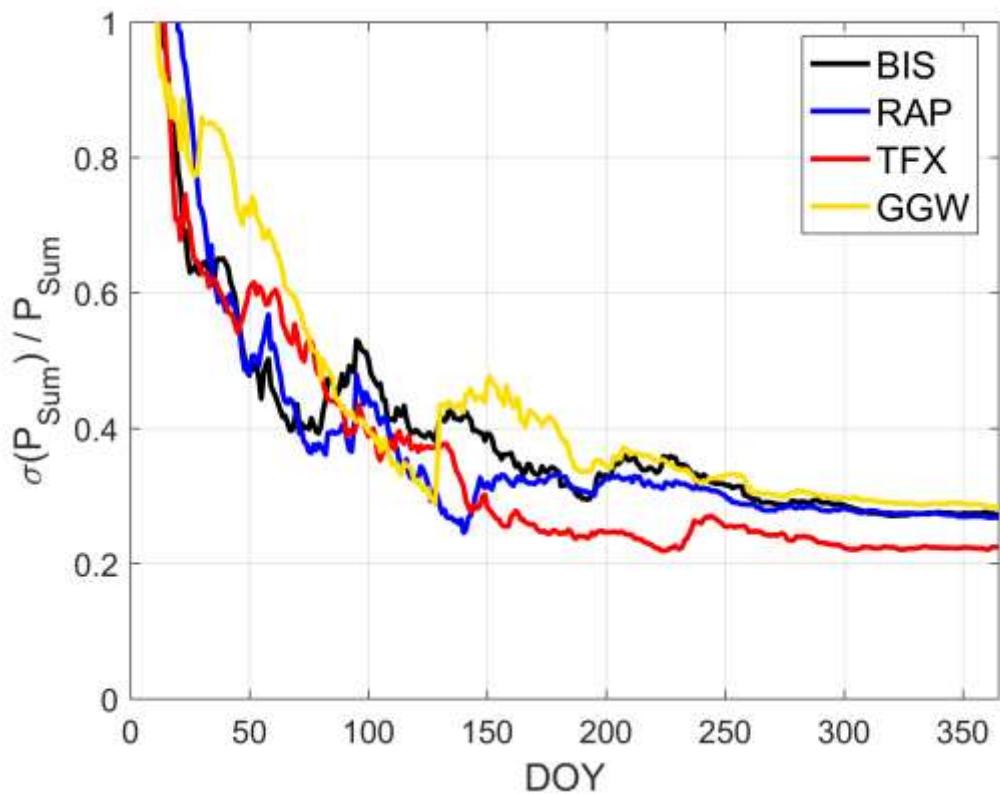
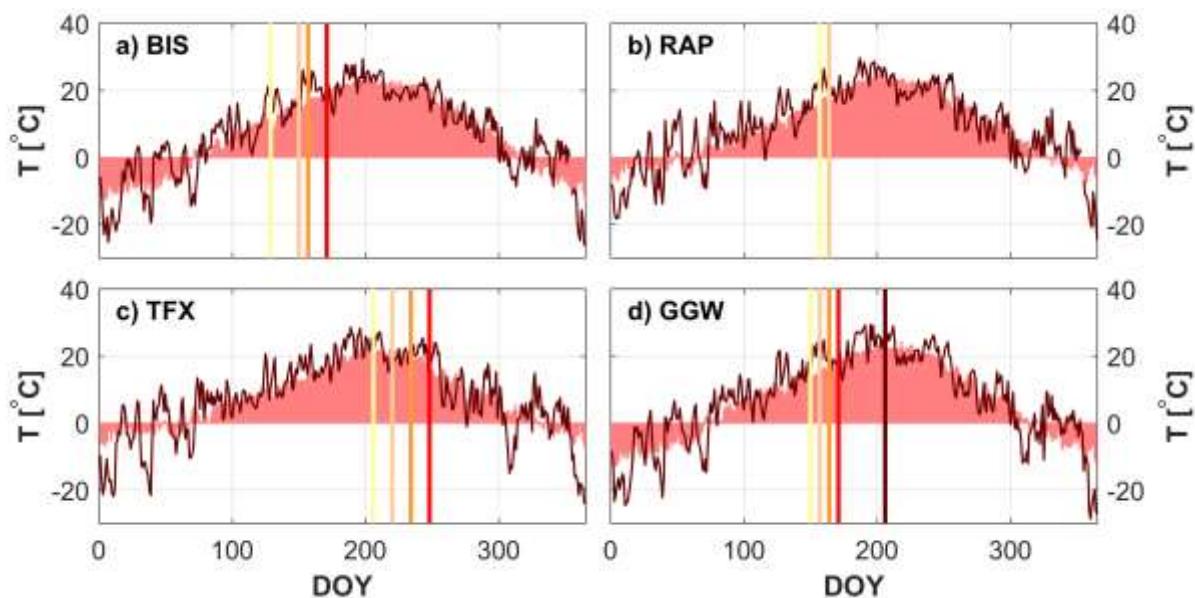
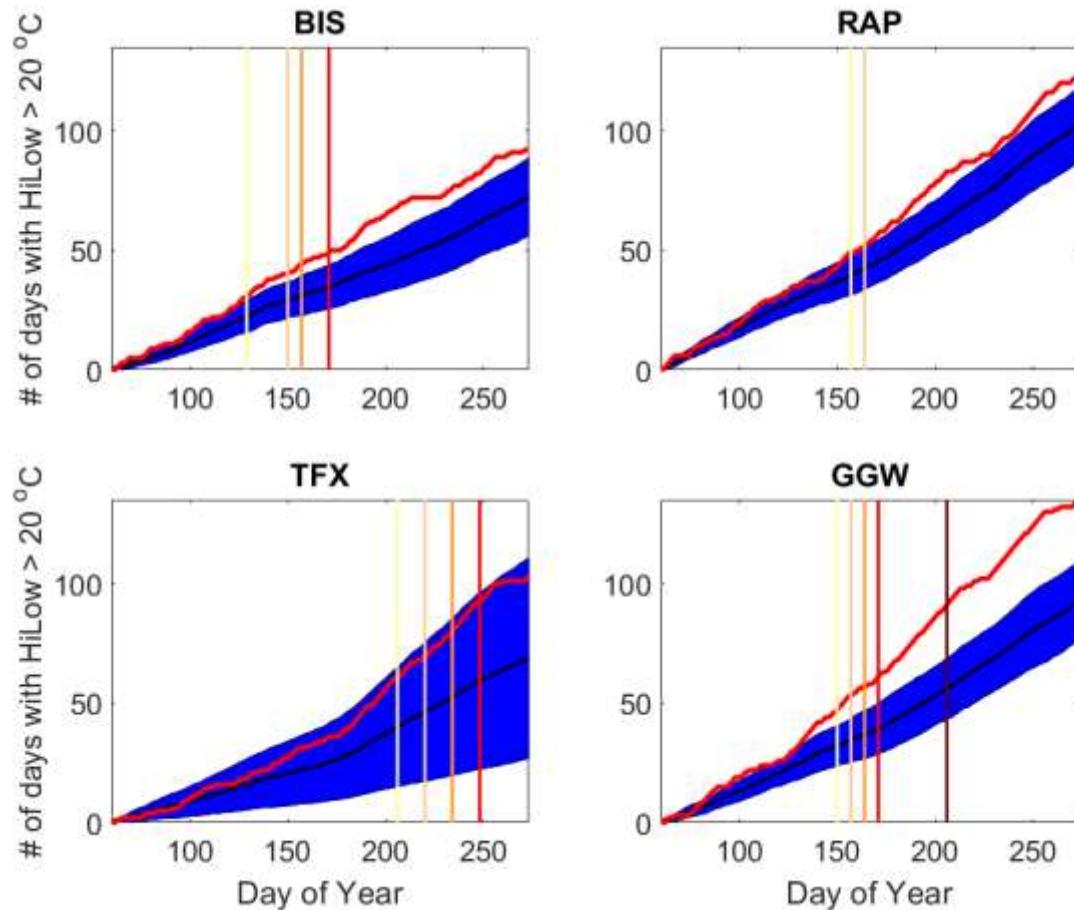


Figure S1. Comparison of standard deviation of P-climatology compared to mean cumulative annual precipitation (1987-2016) for Bismarck, ND (BIS); Rapid City, SD (RAP); Great Falls, MT (TFX); and Glasgow, MT (GGW)



7 **Figure S2.** Air temperature for 2017 (dark red line) compared to 30-year average temperature
8 (1987-2016, shaded area) for (a) Bismarck, ND; (b) Rapid City, SD; (c) Great Falls, MT; and (d)
9 Glasgow, MT. Vertical lines indicate onset of drought (D0 – yellow to D4 – dark red).

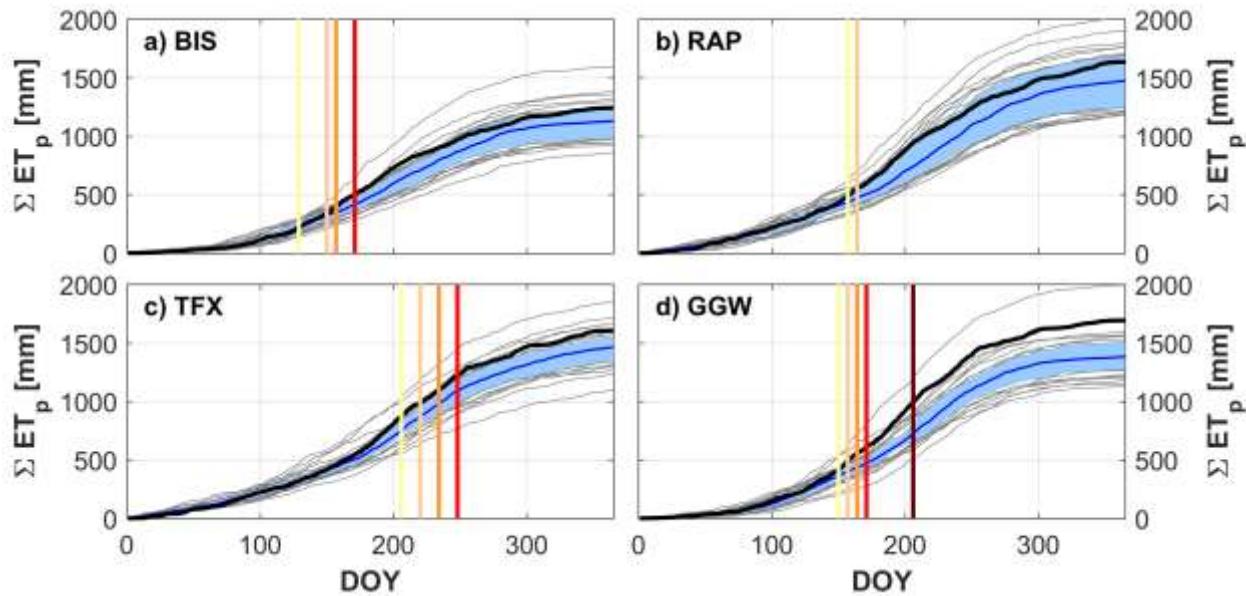
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12 **Figure S3.** Comparison of cumulative number of days with $\text{HI}_{\text{low}} > 20^{\circ}\text{C}$ for 2017 (red line) and
13 the corresponding 1987-2016 climatology (black line) and its standard deviation (shaded area)
14 for (a) Bismarck, ND (BIS); (b) Rapid City, SD (RAP); (c) Great Falls, MT (TFX); and (d)
15 Glasgow, MT (GGW). Vertical lines indicate onset of drought (D0 – yellow to D4 – dark red).

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18 **Figure S4.** Comparison of cumulative potential evapotranspiration (ET_p) estimated from the
19 FAO Penman Monteith equation 2017 (black line), climatological interquartile range (shaded
20 area), and individual years outside the interquartile range (grey lines) for (a) Bismarck, ND; (b)
21 Rapid City, SD; (c) Great Falls, MT; and (d) Glasgow, MT. Vertical lines indicate onset of
22 drought (D0 – yellow to D4 – dark red).