Supporting Information for "Impact of floodplains and groundwater processes on present-day climate simulated by the CNRM climate model"

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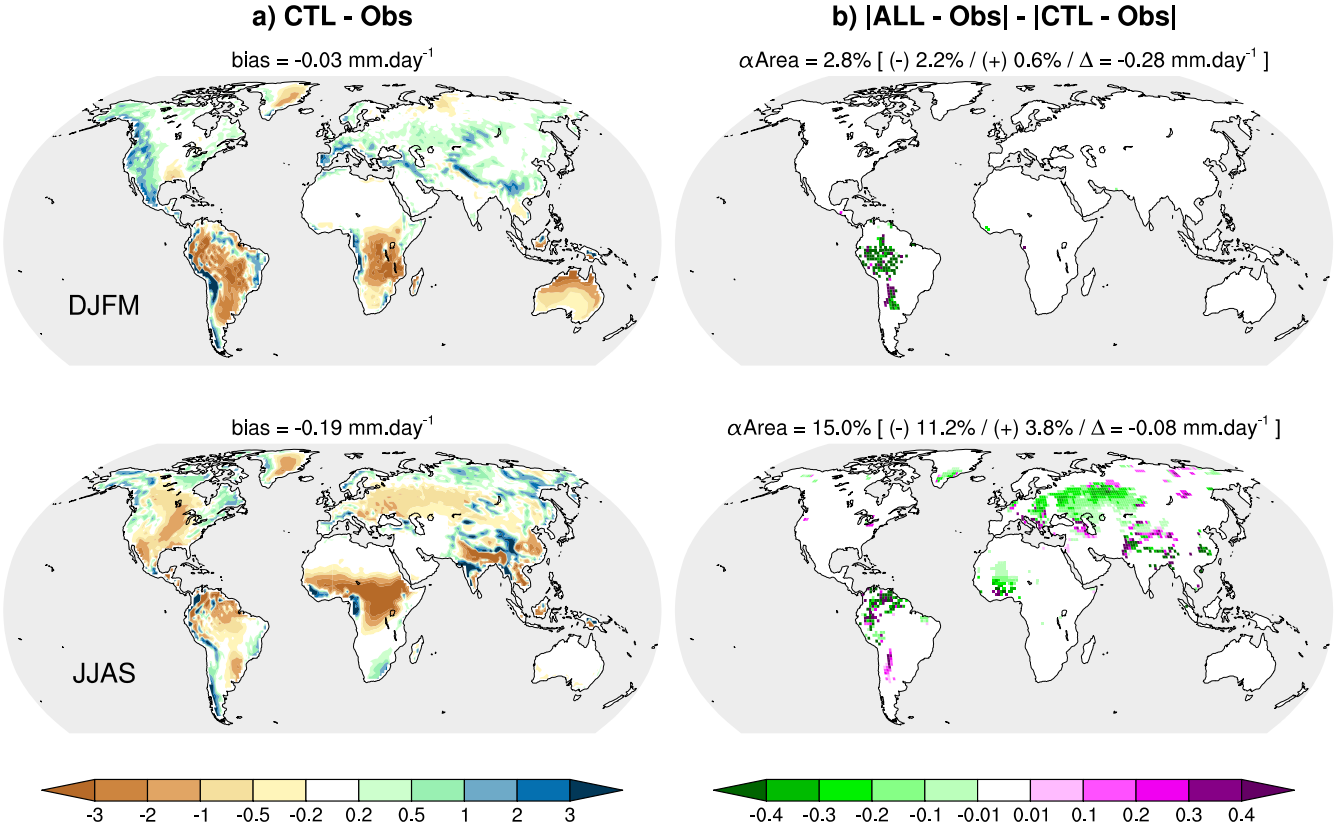

Figure S1. Observed *vs.* simulated precipitation over the 1980–2014 period as in Figure 10a but for extended boreal winter (DJFM) and summer (JJAS) : **(a)** The CTL ensemble mean bias compared to observations ; and **(b)** Differences between the CTL and ALL absolute biases over regions with statistically significant difference between CTL and ALL at a 95% level of confidence.

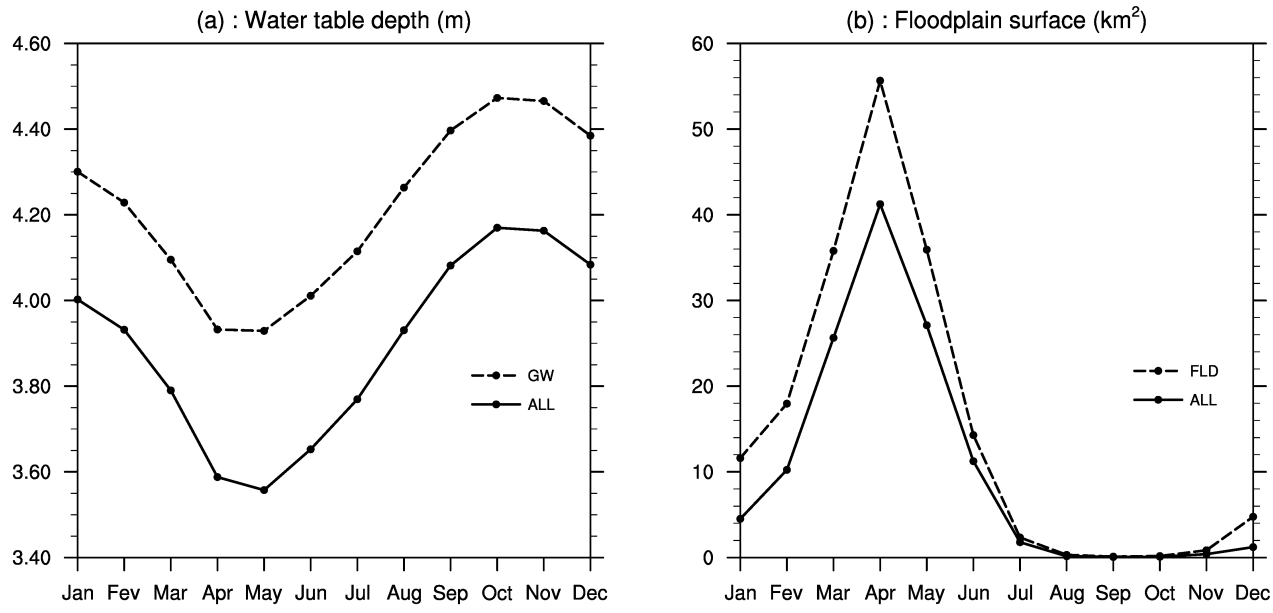

Figure S2. (a) : Water table depth (m) mean seasonal cycle averaged over the [15-60°E ; 40-60°N] box of Figures 7 and 8 for GW and ALL simulations. (b) : Floodplain surface (km^2) mean seasonal cycle averaged over the same box, for FLD and ALL.)

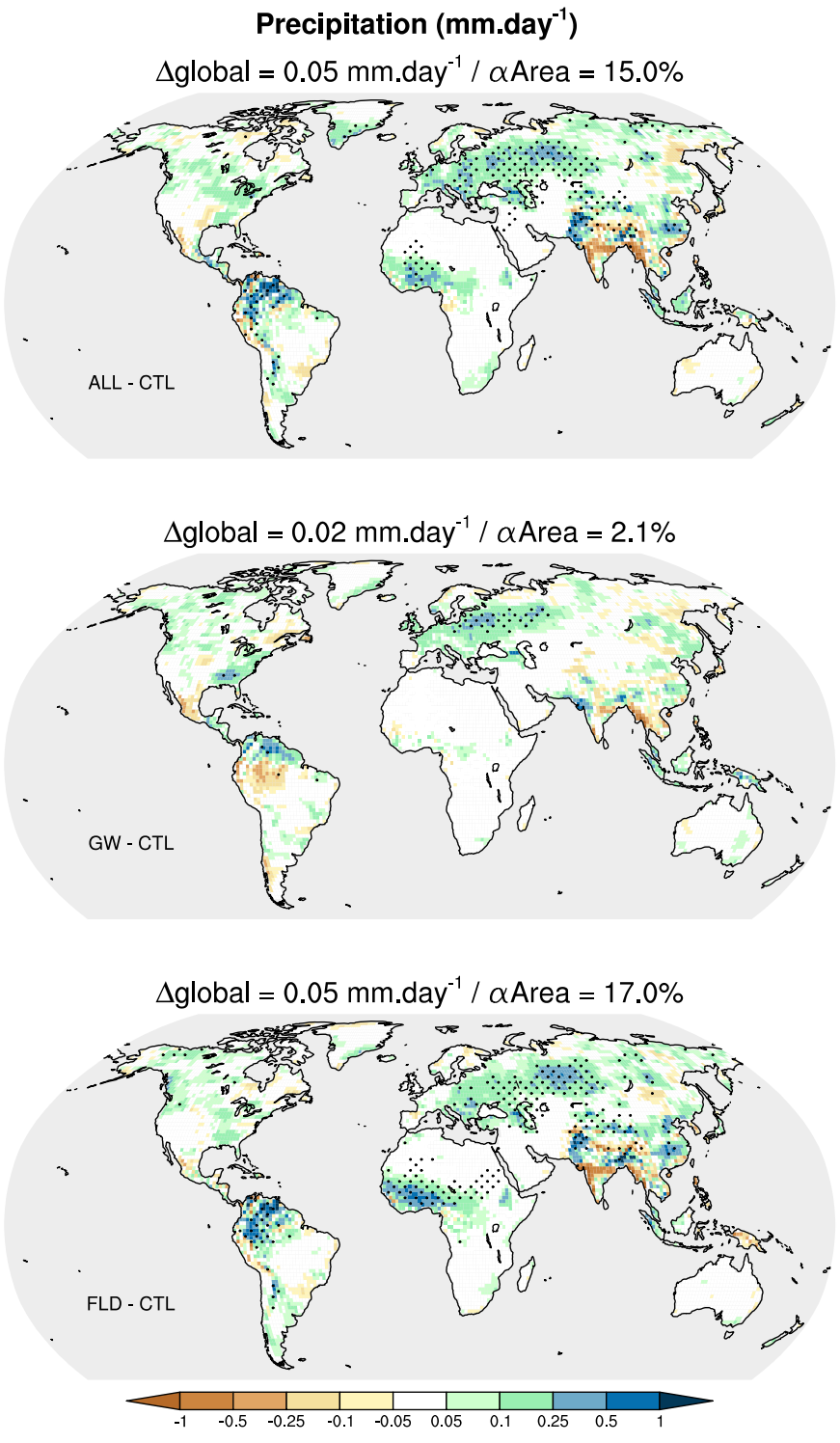

Figure S3. Impact of groundwater and floodplains on simulated extended boreal summer (June to September) precipitation over the 1980–2014 period, as in Figure 9a.

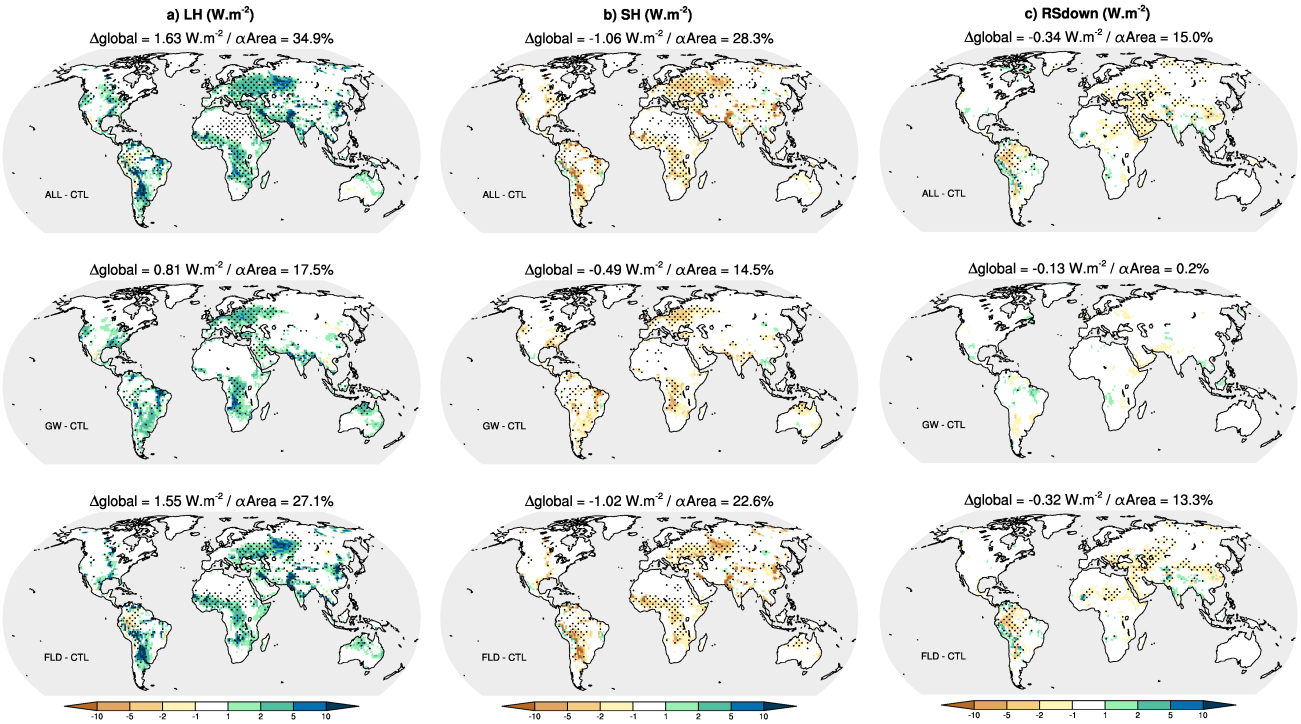

Figure S4. Impact of groundwater and floodplains on **(a)** surface latent heat flux **(b)** surface sensible heat flux and **(c)** downward surface solar radiation over the 1980–2014 period as in Figure 9b.

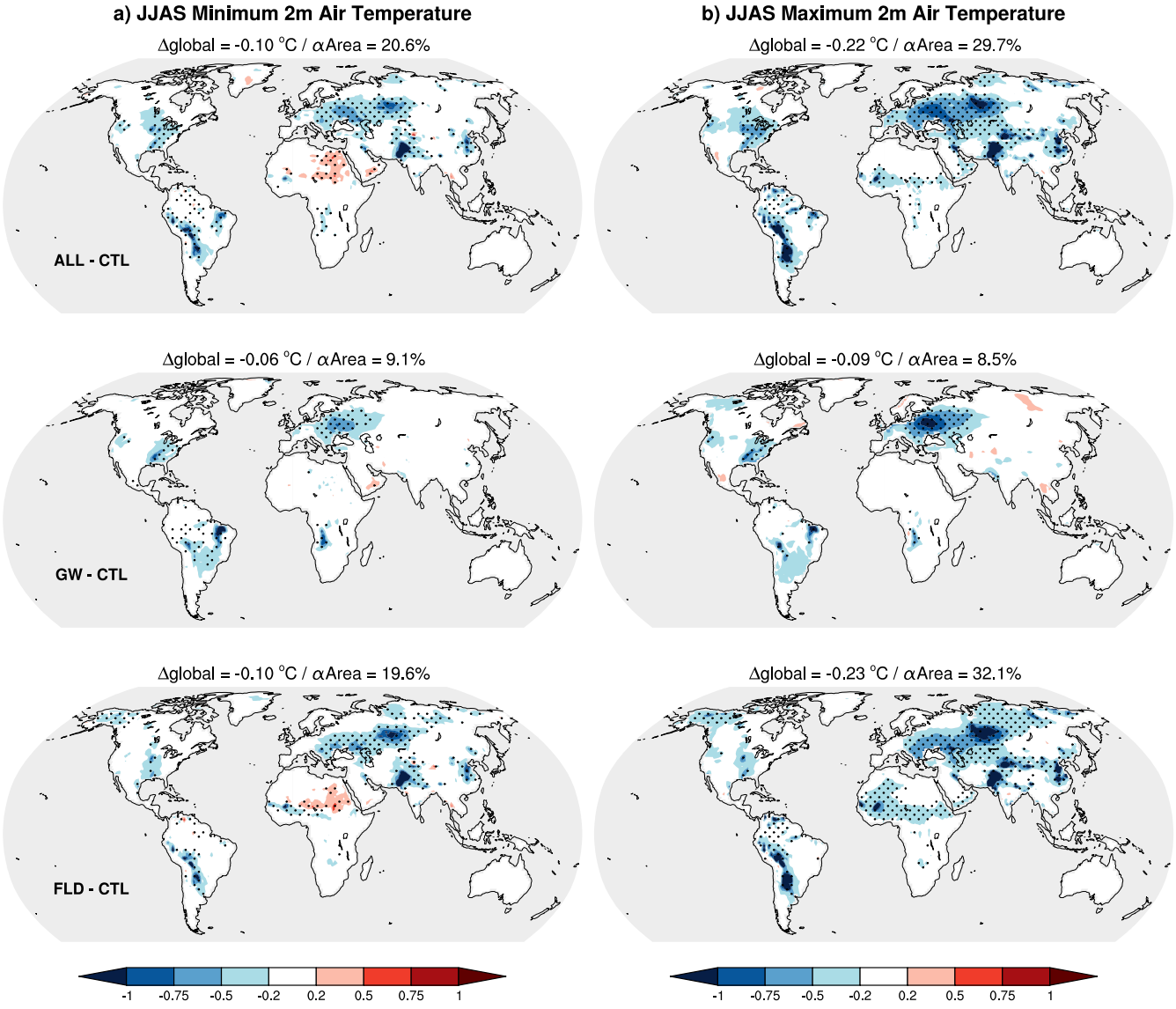

Figure S5. Impact of groundwater and floodplains on simulated extended boreal summer **(a)** daily-minimum and **(b)** daily-maximum mean monthly 2m air temperature over the 1980–2014 period as in Figure Figure 9b.

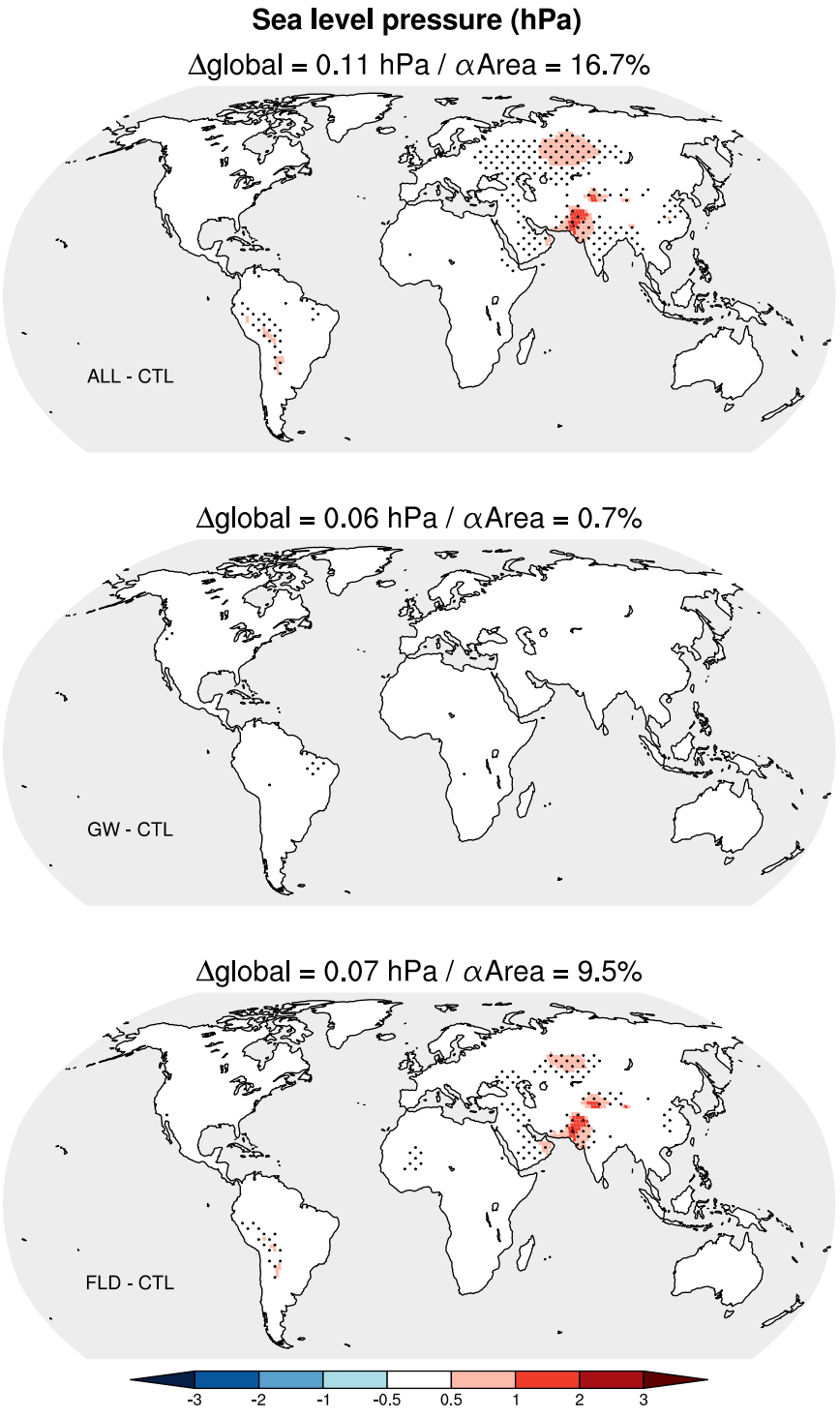

Figure S6. Impact of groundwater and floodplains on the boreal extended summer simulated sea level pressure over the 1980–2014 period, as in Figure 9a.

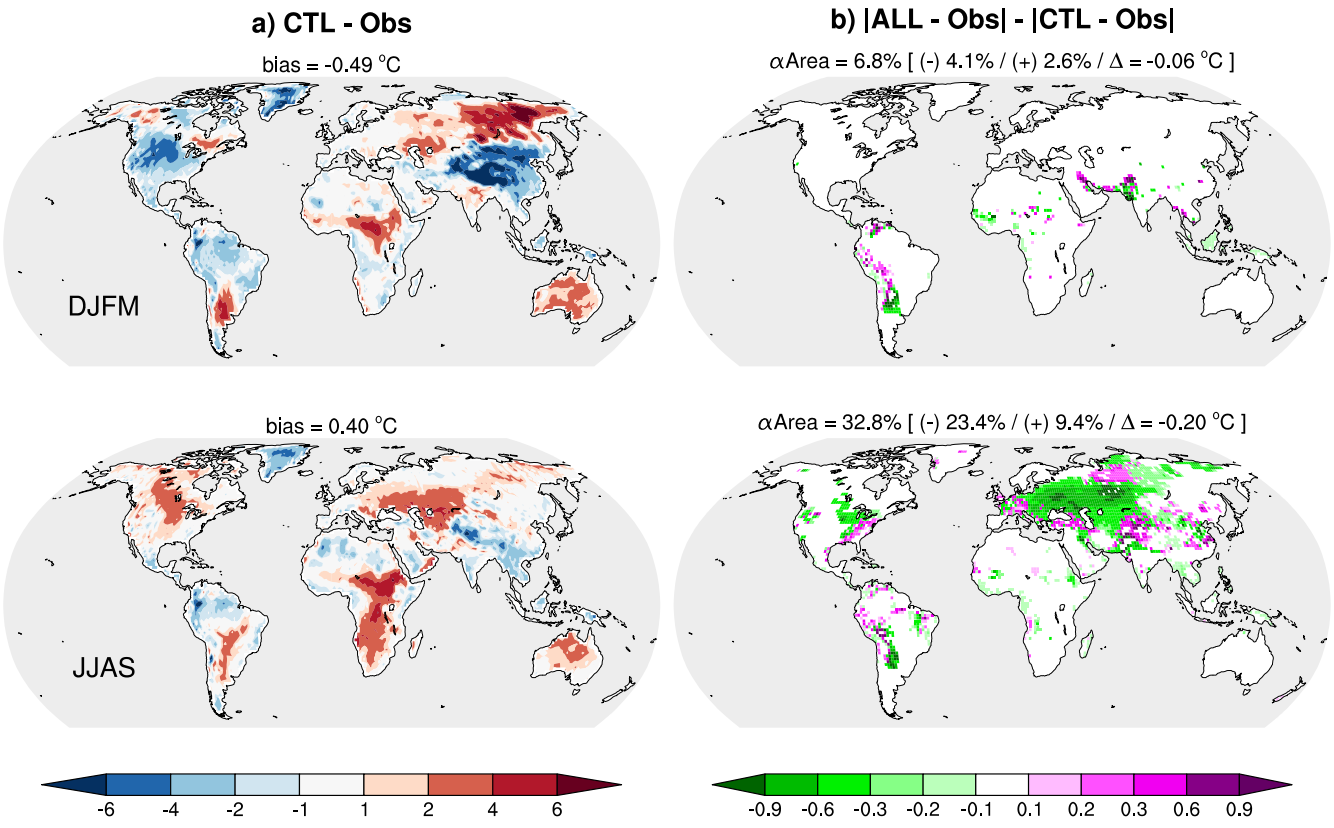

Figure S7. As in Figure S1 but for observed *vs.* simulated mean 2m air temperature according to Figure 10b.

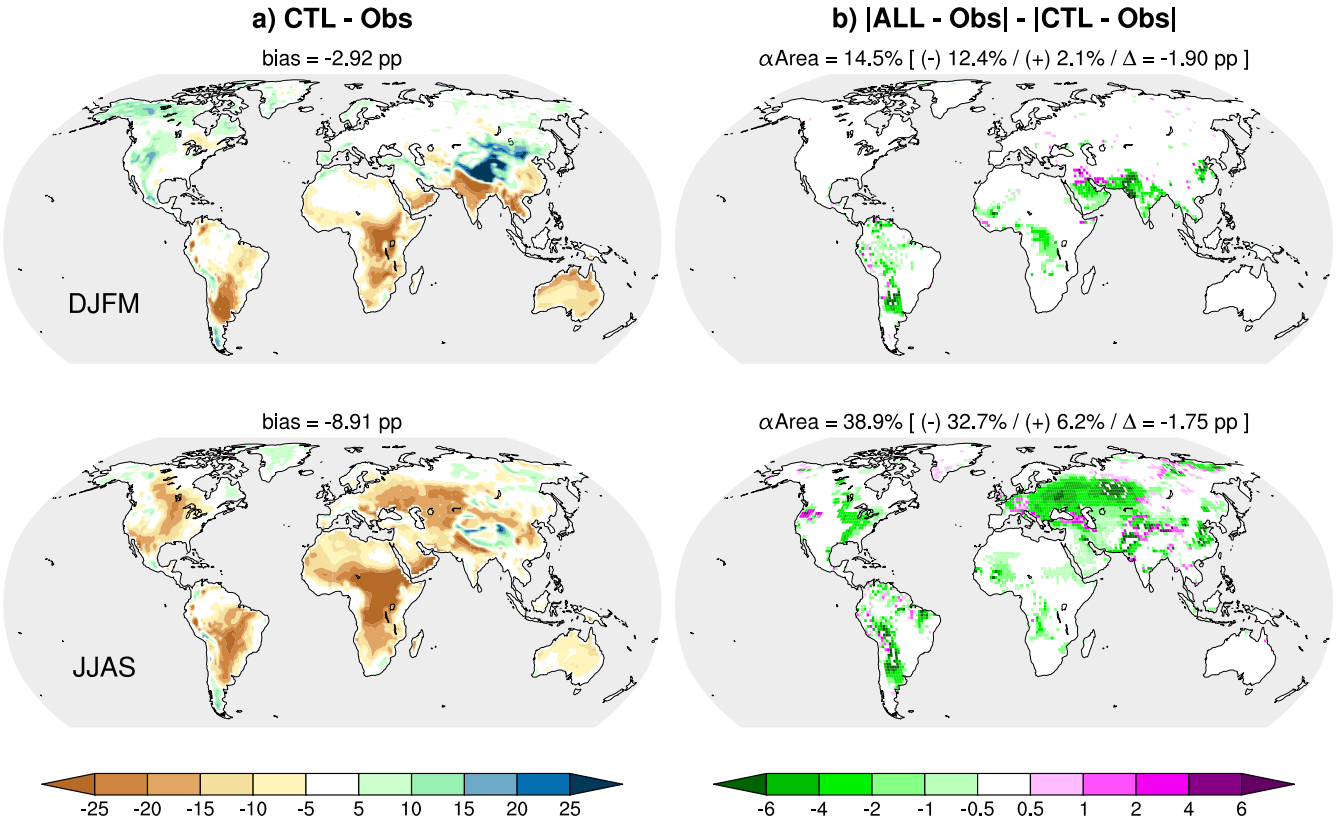

Figure S8. As in Figure S1 but for observed *vs.* simulated mean 2m air relative humidity according to Figure 10a.

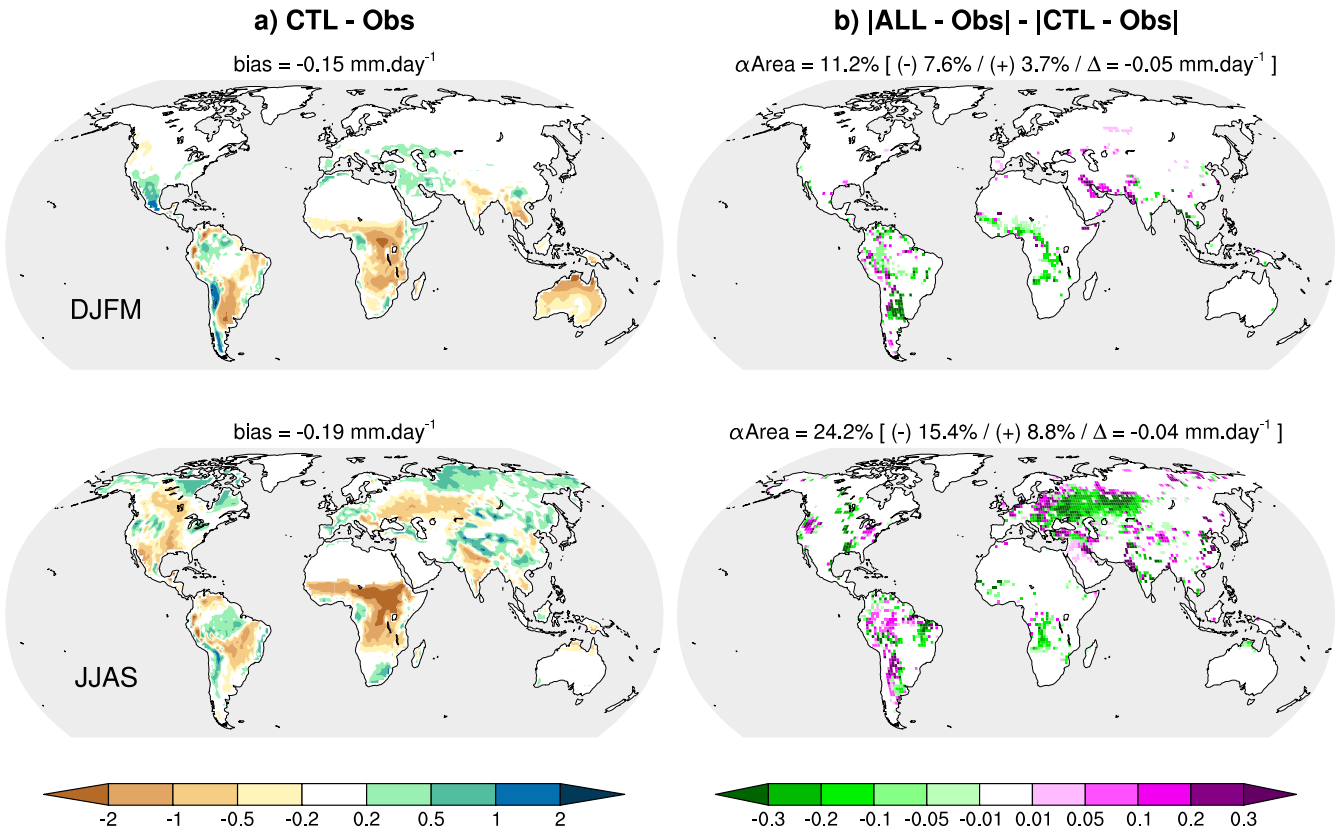

Figure S9. As in Figure S1 but for observed *vs.* simulated mean land surface evapotranspiration according to Figure 11b.