

Figure S1. Average magnitude of 1961-2005  $T_{1961-1985}$  (orange) and changes between 1986-2010 and 1961-1985  $T_{1986-2005} - T_{1961-1985}$  (blue) of in annual mean temperature (K) at various spatial resolution in degree.



Figure S2. Taylor diagrams of seasonal NW derived from GCMs against observations based on the site-scale, grid-scale, and grid-point comparisons.



Figure S3. Taylor diagrams of seasonal R5d derived from GCMs against observations based on the site-scale, grid-scale, and grid-point comparisons.



Figure S4. Taylor diagrams of seasonal R10 derived from GCMs against observations based on the site-scale, grid-scale, and grid-point comparisons.



Figure S5. Spatial distribution of difference in simulated precipitation extremes relative to observations for NW (day), and R95T (%) during 1991-2005 at the site-scale and grid-point comparison.



Figure S6. Projected changes in (a) R10 (day), and (b) R95T (%) during 2071-2100 under RCP8.5 relative to during 1971-2000 under the historical scenario at the site scale and at GCMs' original spatial resolutions.