



Supplement of

Spatial-temporal changes in runoff and terrestrial ecosystem water retention under 1.5 and 2 °C warming scenarios across China

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Figure S1: Observed and simulated monthly runoff during the preheating period (1961–1962), calibration period (1963–1969) and validation period (1970–1979).



Figure S2: Median values of the projected changes in annual evapotranspiration (%) in China under the 1.5°C (a, b, c, d, e) and 2.0°C (f, g, h, i, j) warming scenarios by the ECHAM6-3-LR (a, f), MIROC5 (b, g), NorESM1-HAPPI (c, h), CAM4-2degree (d, i), all the four GCMs (e, j), relative to 2006-2015.



Figure S3: Median values of the changes in SD of the annual precipitation (%) in China under the 1.5°C (a, b, c, d, e) and 2.0°C (f, g, h, i, j) warming scenarios by the ECHAM6-3-LR (a, f), MIROC5 (b, g), NorESM1-HAPPI (c, h), CAM4-2degree (d, i), all the four GCMs (e, j), relative to 2006-2015.



Figure S4: Box-and-whisker plots of annual mean temperature change (°C), annual precipitation change (%), annual runoff change (%), annual TEWR change (%) from ensembles in each GCM and all the 70 ensembles from all GCMs under 1.5°C and 2.0°C warming scenarios in the ten main basins across China, relative to 2006-2015.



Figure S5: Median changes (%) in low runoff (Q₉₀) (a) and high runoff (Q₁₀) (b) in each main basin in China in each GCM and in all the four GCMs under 1.5°C and 2.0°C warming scenarios, respectively, relative to 2006-2015.



Figure S6: Probability density functions of runoff change (%) under 1.5°C and 2.0°C warming scenarios in each basin, relative to 2006-2015.



Figure S7: Probability density functions of TEWR change (%) under 1.5°C and 2.0°C warming scenarios in each basin, relative to 2006-2015.



Figure S8: Probability density functions of low runoff change (%) under 1.5°C and 2.0°C warming scenarios in each basin, relative to 2006-2015.



Figure S9: Probability density functions of high runoff change (%) under 1.5°C and 2.0°C warming scenarios in each basin, relative to 2006-2015.