Supplementary

Supplementary material for:

Downscaling simulation of groundwater storage in the Beijing, Tianjin, and Hebei regions of China based on GRACE data

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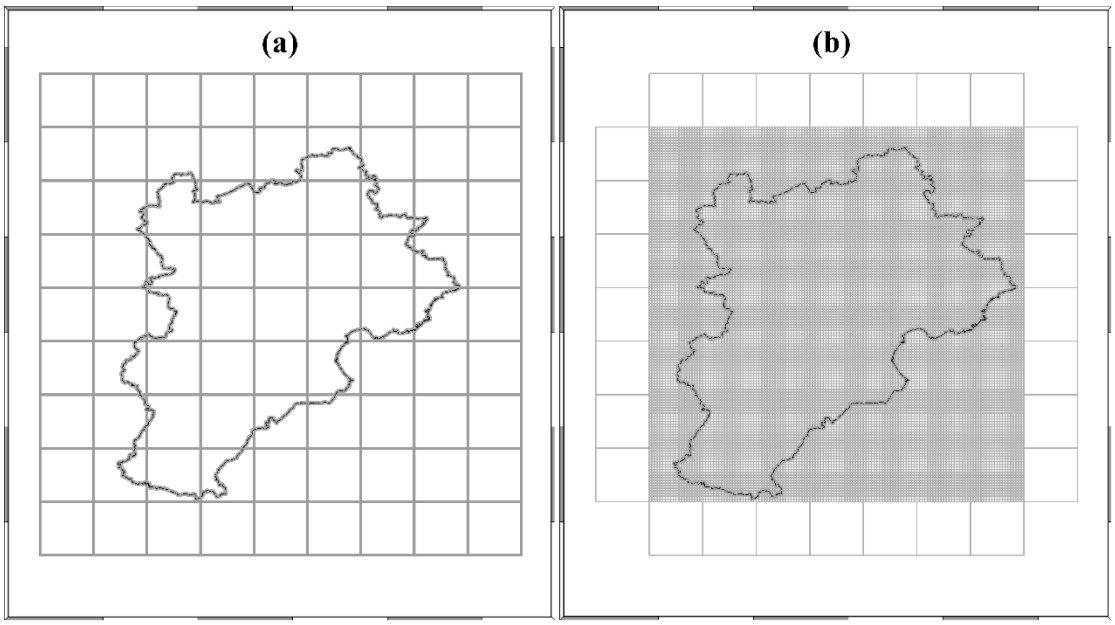


Figure S1. Comparisons of the two spatial scales, (a) 1° and (b) 0.05° in grid cells.

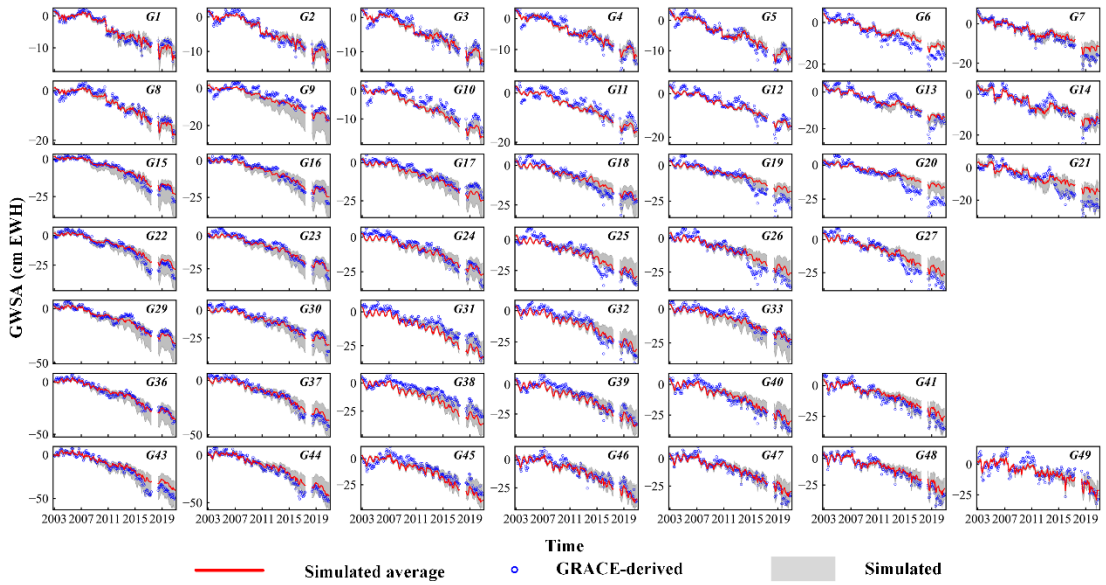


Figure S2. Time series changes in GWSA with a spatial downscaling scale of 0.05° at a spatial resolution of 1° for 45 cells. The blue scatters are GRACE-derived GWSA at 1° grid, the grey band are the range of GWSA variation for all 0.05° grids at 1° grid, red lines are the average GWSA of all 0.05° grids at 1° grids.

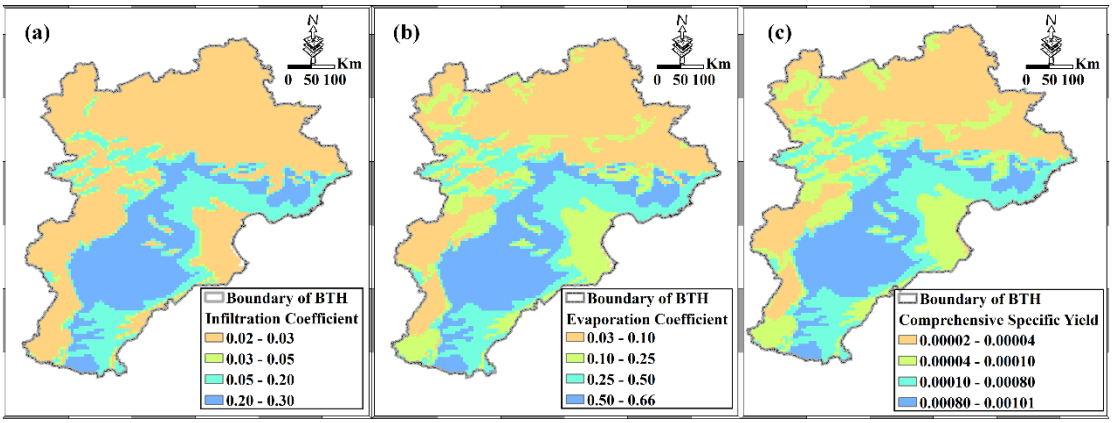


Figure S3. Spatial distribution of (a) precipitation infiltration coefficients and (b) evapotranspiration coefficient and (c) comprehensive specific yield in the study area.

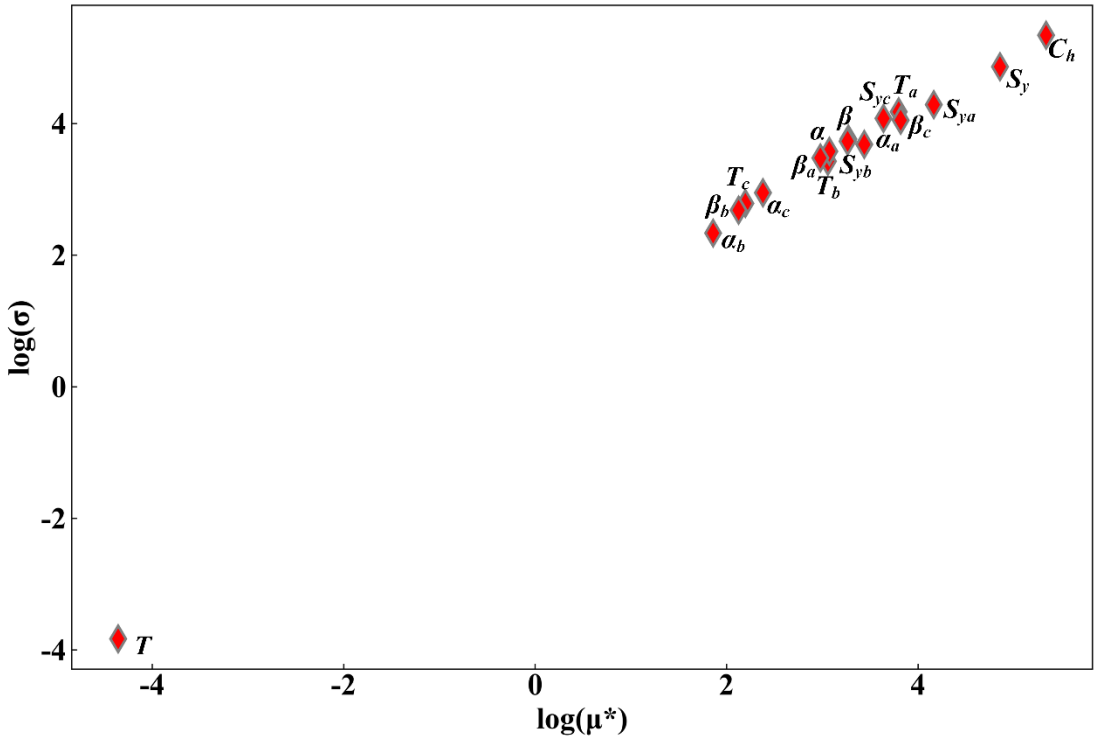


Figure S4. Sensitivities of hydrogeology parameters, u^* and δ represent mean and standard deviation. T, α, β, and S_y represent the transmissivity, precipitation infiltration coefficient, evapotranspiration coefficient and comprehensive specific yield of the aquifer in the Zone Ⅰ, respectively, and the subscripts a, b, and c represent the parameters in the Zone Ⅱ, Zone Ⅲ, and Zone Ⅳ, respectively, C_h represents the hydraulic gradient coefficient in the study area.

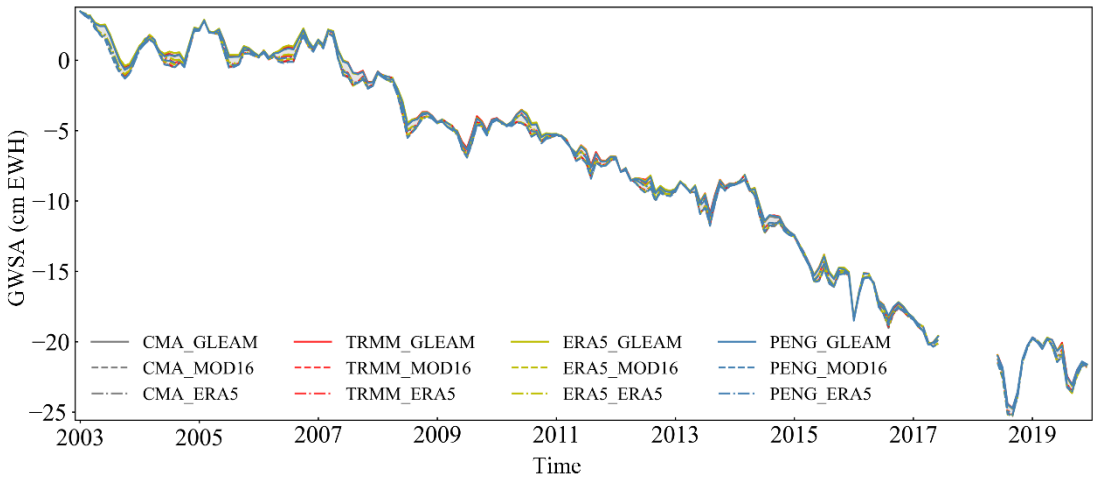


Figure S5. Comparisons of the average GWSA for 12 scenarios with different driving data in this study area.