

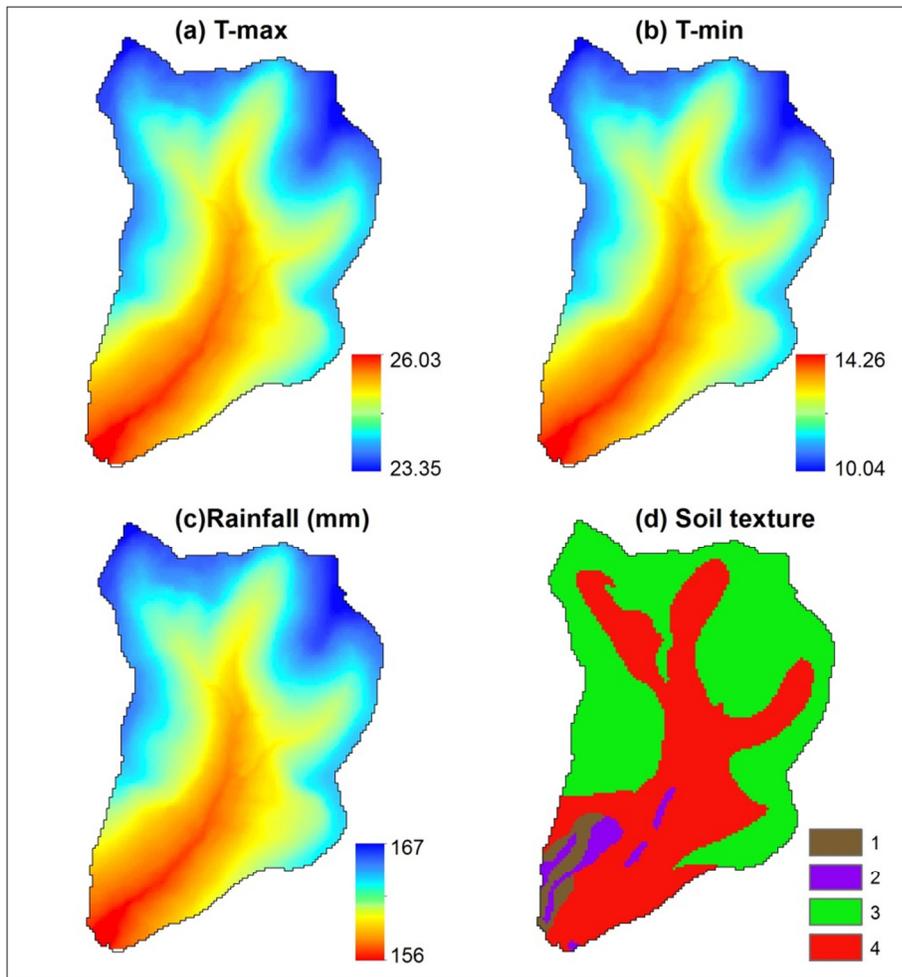
1 **Appendices A:**

2 **Table A1.** Comparison of simulated flow data and leaf area index (LAI) under the two
 3 simulations with corresponding observed flow data for the calibration and evaluation period

Water routing	Statistics	Calibration period (1992-1993)					Evaluation period (1994-1995)				
		S-SF ¹	O-SF ²	S-BF ³	O-BF ⁴	LAI ⁹	S-SF	O-SF	S-BF	O-BF	LAI
No	Mean	2.34	2.76	1.78	1.79	4.06	2.54	2.51	1.92	1.63	3.89
	STD ⁵	2.91	4.43	1.46	1.76	1.51	3.68	4.00	1.92	1.67	1.45
	NS ⁶	0.59		0.68			0.66		0.71		
	R ²	0.62		0.68			0.67		0.80		
	Bias ⁷	-15.7%		-0.17%			1.25%		18.3%		
	RMSE ⁸	2.84		0.99			2.33		0.90		
Yes	Mean	2.30	2.74	1.51	1.79	3.66	2.50	2.51	1.59	1.63	3.36
	STD	2.94	4.44	0.99	1.76	1.36	3.46	4.00	1.12	1.67	1.27
	NS	0.59		0.59			0.63		0.69		
	R ²	0.62		0.68			0.63		0.72		
	Bias	-16.8%		-15.3%			-0.6%		-2.2%		
	RMSE	2.84		1.13			2.44		0.94		

4 S-SF¹ and S-BF² refers to simulated stream and base flow, respectively; O-SF³ and O-BF⁴ refers to observed stream
 5 and base flow, respectively. STD⁵ stands for standard deviation; NS⁶ refers to Nash-Sutcliff coefficient; Bias⁷ is
 6 calculated as the average difference in simulated minus observed values for the comparison period divided by the
 7 average observed value in terms of percent. ⁹LAI is annual averaged value for the entire watershed and in m² m⁻².

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10 **Fig. A1** Examples of interpolated monthly average daily (a) maximum and (b) minimum
 11 temperature as well as (c) total precipitation for July, 1994. Panel (d) shows soil texture used in
 12 the study: 1, 2, 3, and 4 represents silt loam, sand loam, rocky, and loamy-skeleton, respectively.

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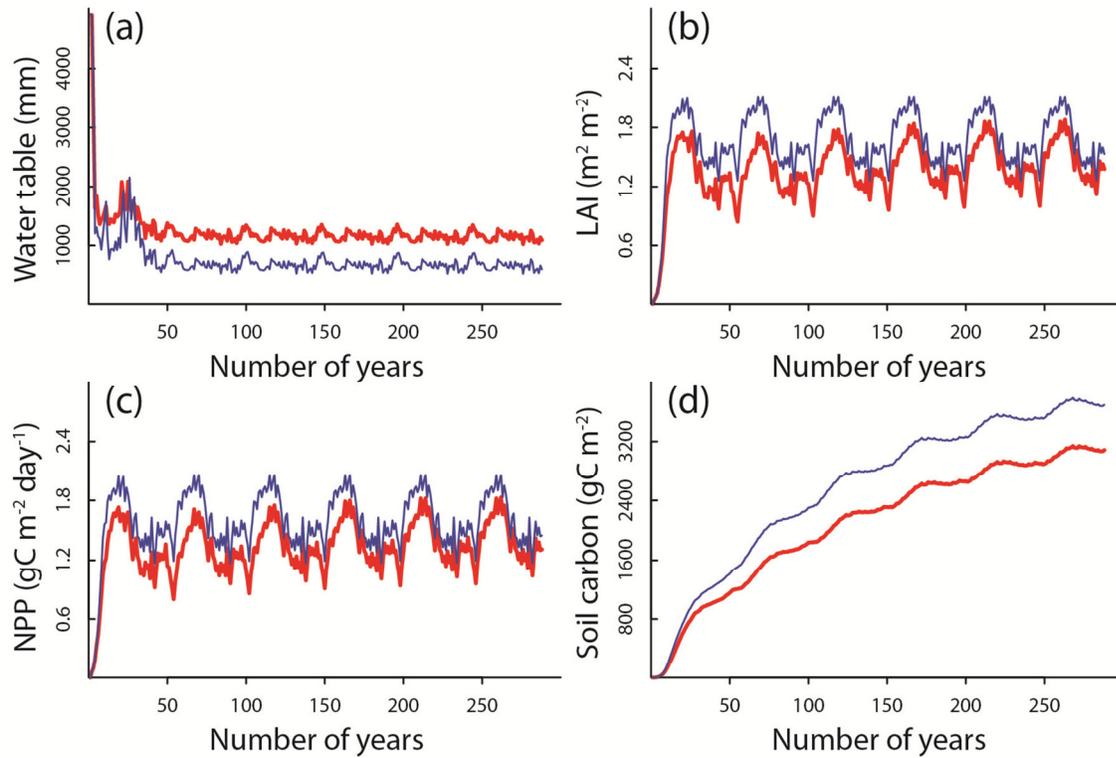
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21 **Fig. A2** The model's behavior in simulating annual average daily (a) soil water table depth, (b)
 22 leaf area index (LAI), (c) net primary productivity (NPP) and (d) soil carbon for the Biscuit
 23 watershed under simulation considering water routing (solid red line) and that ignoring water
 24 routing (soild blue line).

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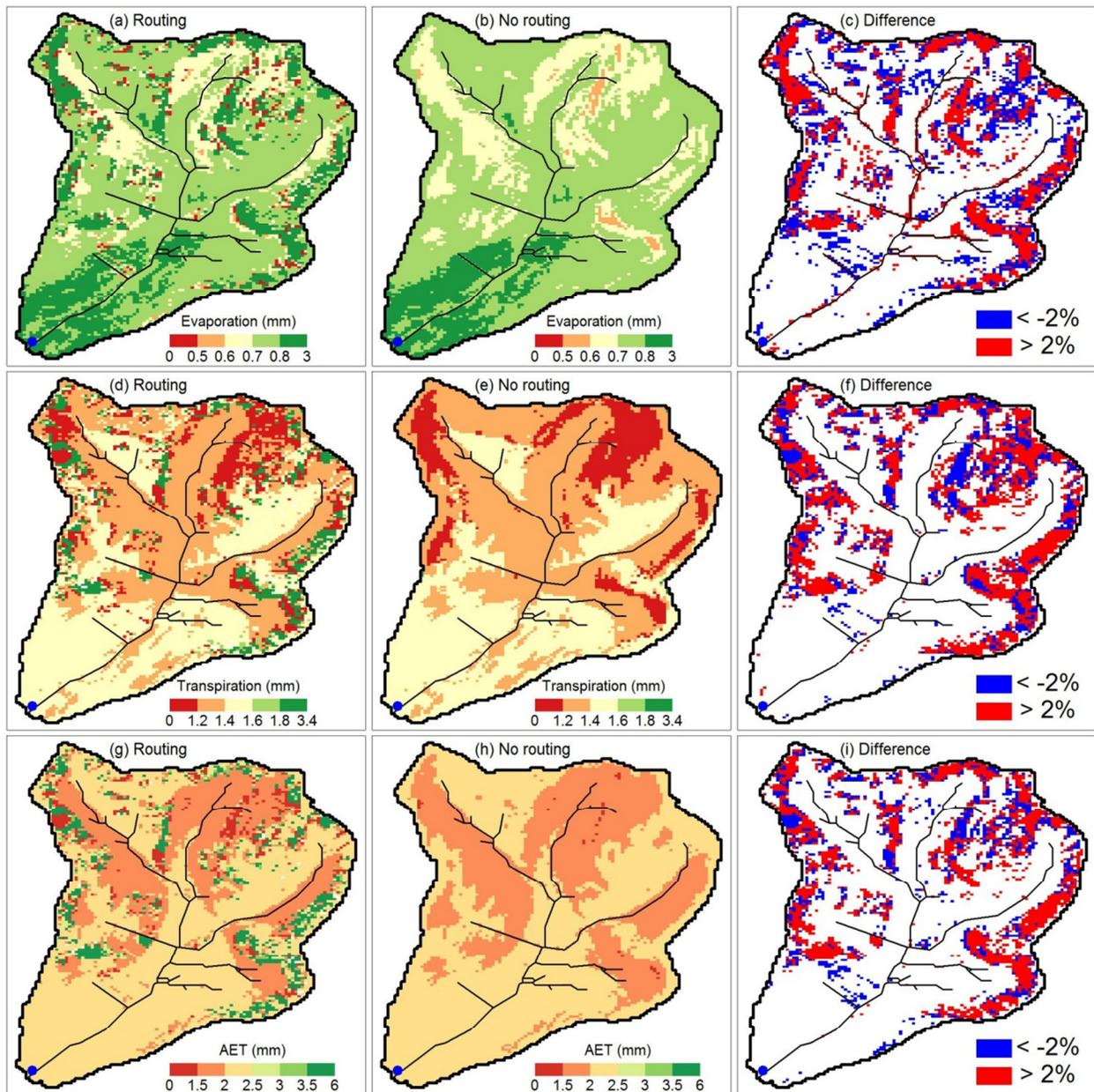
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35 **Fig. A3** Comparison of simulated monthly average daily evaporation, transpiration and actual
 36 evapotranspiration (AET) in July, 1994 between the two simulations: (a), (d) and (g) condising
 37 water routing with (b), (e) and (h) ignoring water routing. (c), (f) and (i) show percentage
 38 differences between the two simulations divided by results from the simulation considering water
 39 routing. The white areas show no significant differences.

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