

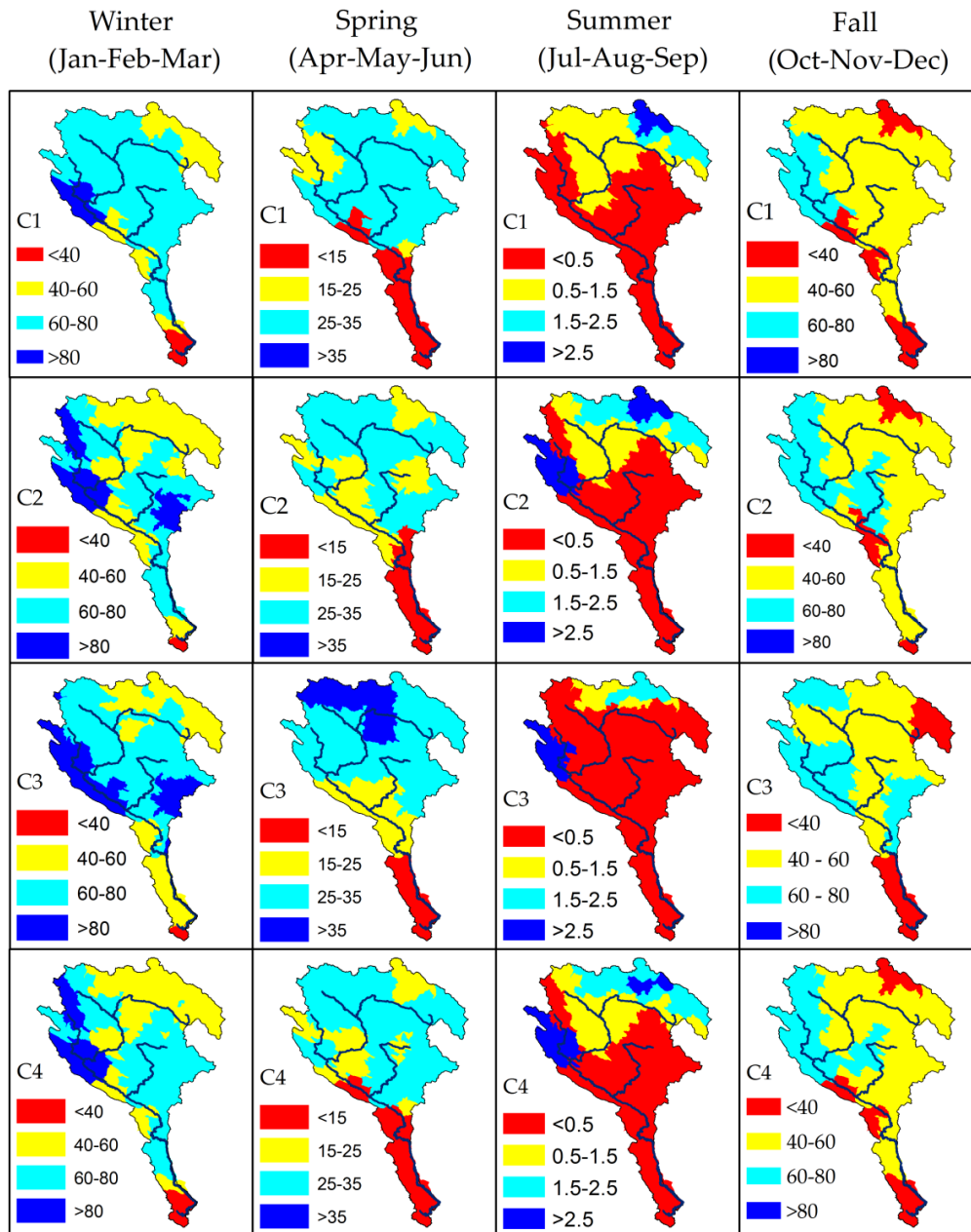


Figure S1. Average monthly precipitation (mm month⁻¹) by seasons during 1980-2004 in C1, C2, C3, and C4 datasets on 343 subbasins created for the study area.

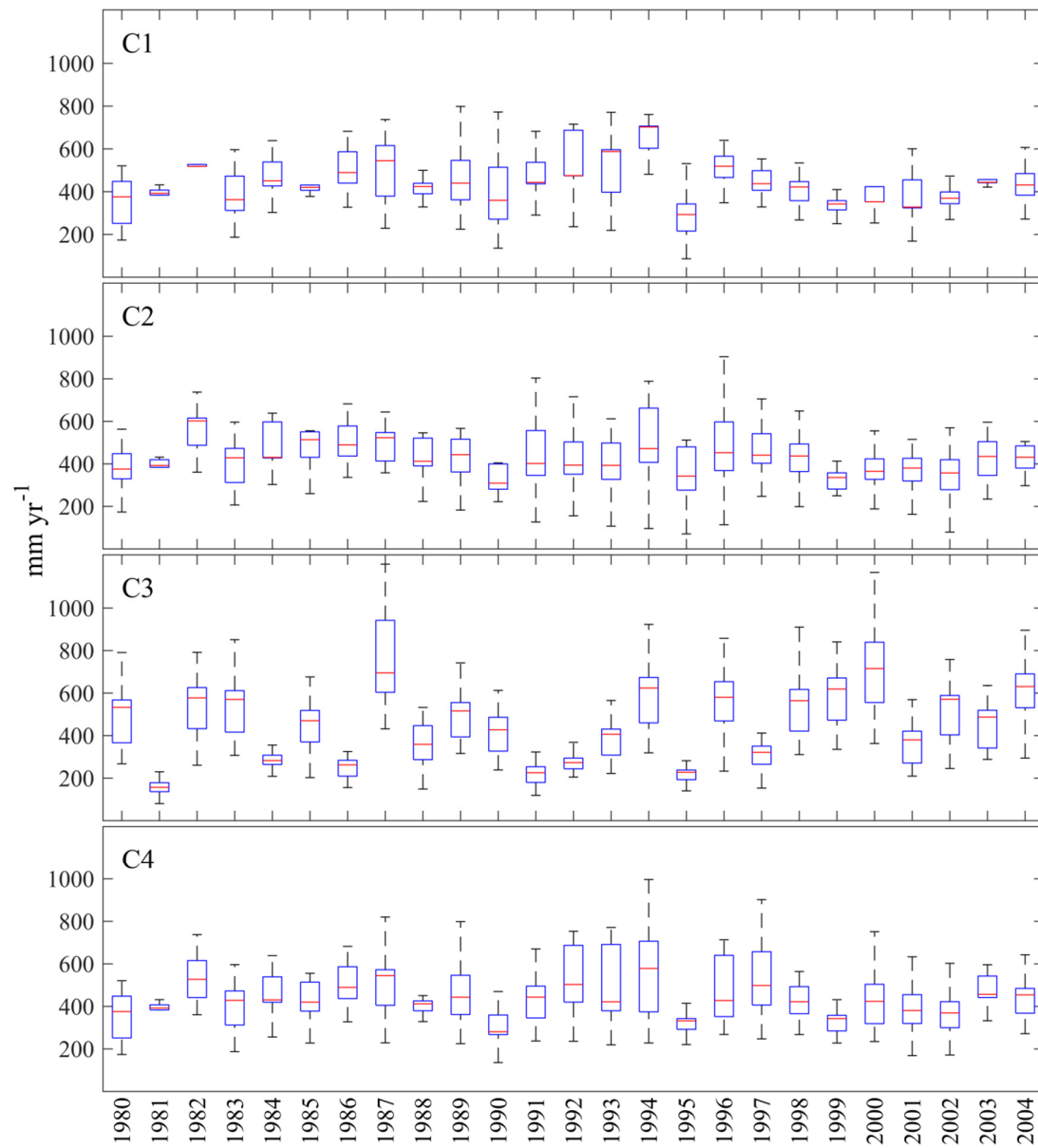


Figure S2. Comparison of temporal variation of four sets of climate data based on yearly precipitation during the studied period.

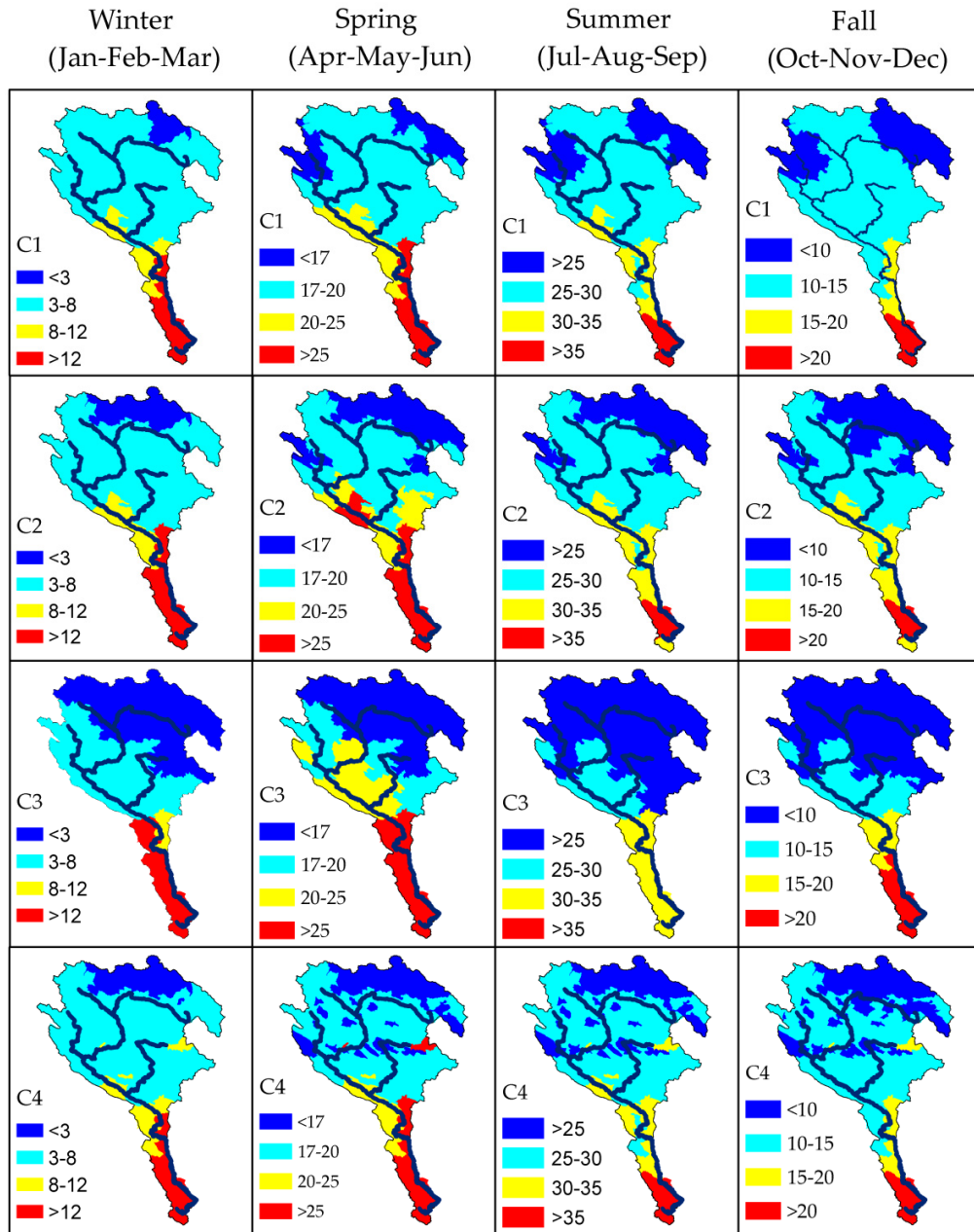


Figure S3. monthly average temperature ($^{\circ}\text{C}$) by seasons during 1980-2004 in C1, C2, C3, and C4 datasets on 343 subbasins created for the study area.

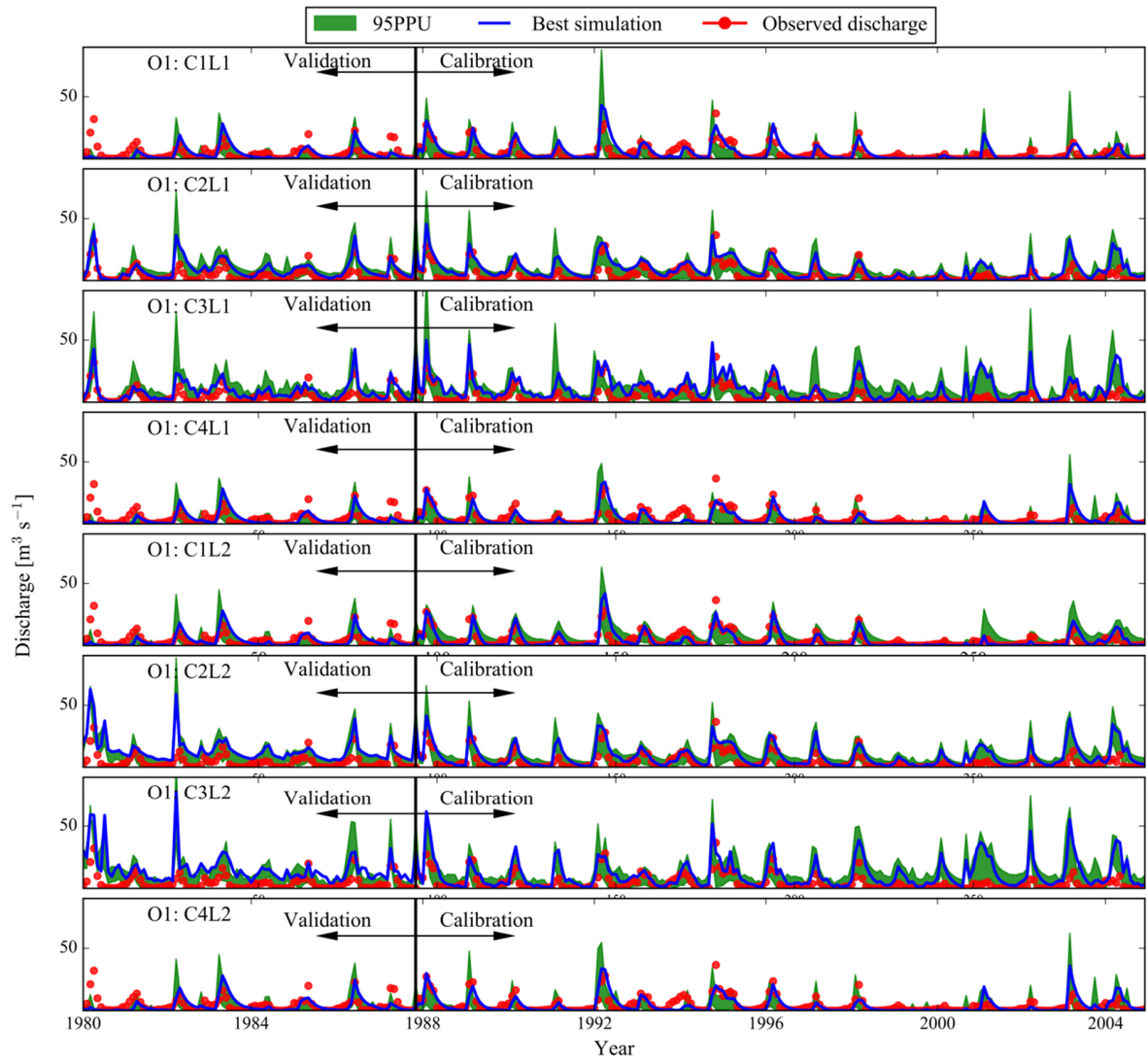


Figure S4. Comparison of simulated and observed discharge values in the O1 outlet (Figure 1) during calibration. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

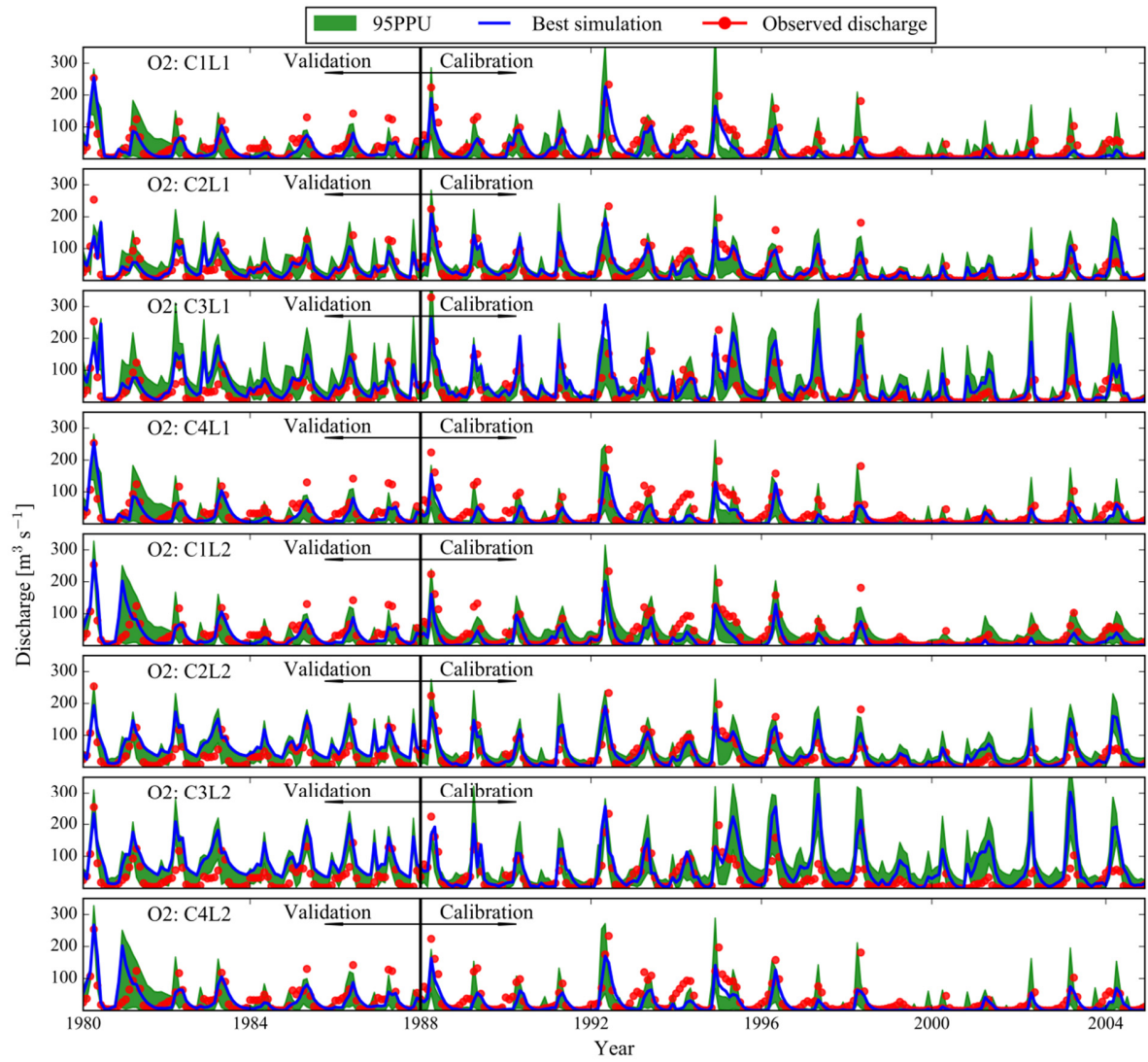


Figure S5. Comparison of simulated and observed discharge values in the O2 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

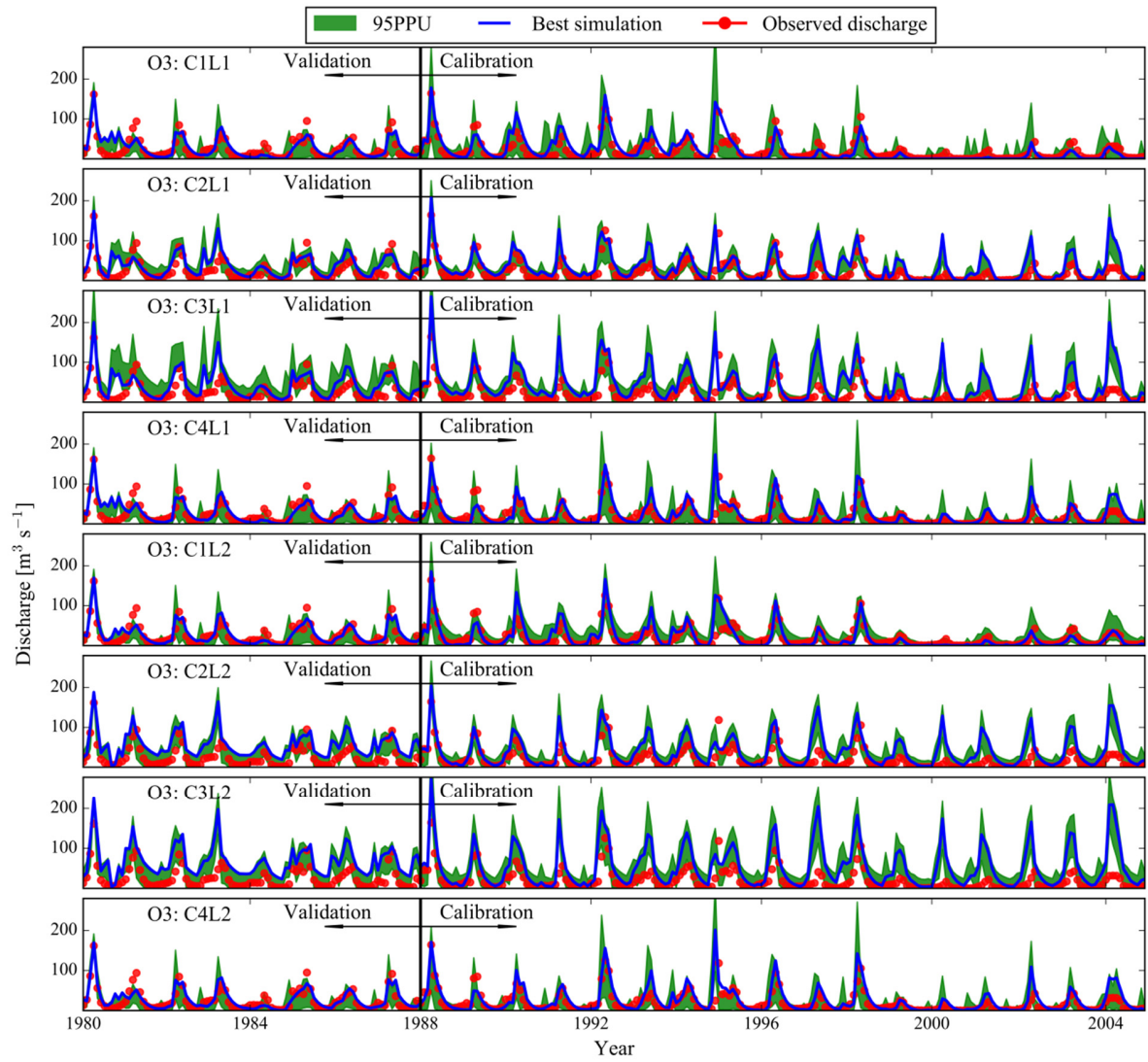


Figure S6. Comparison of simulated and observed discharge values in the O3 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

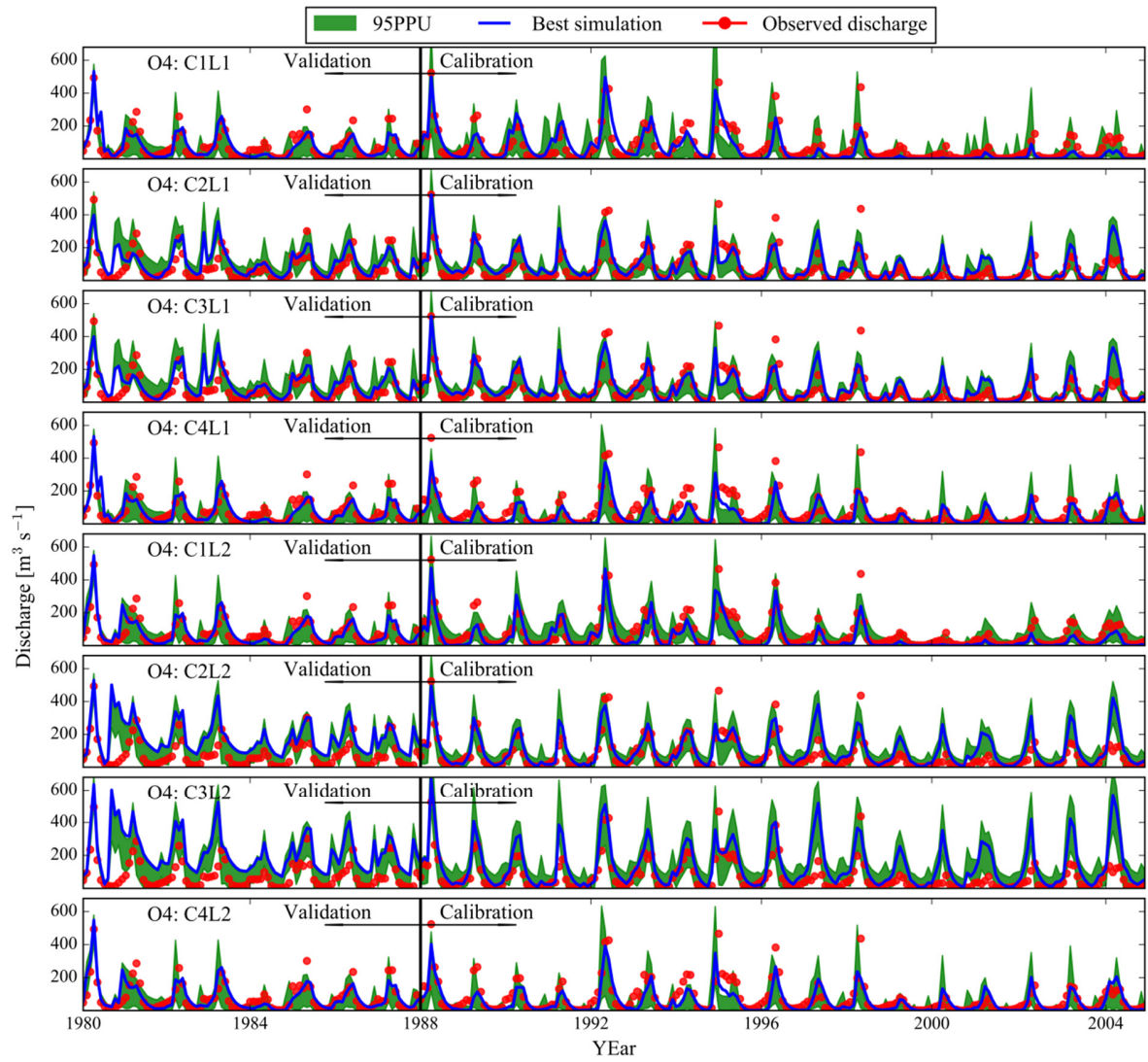


Figure S7. Comparison of simulated and observed discharge values in the O4 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

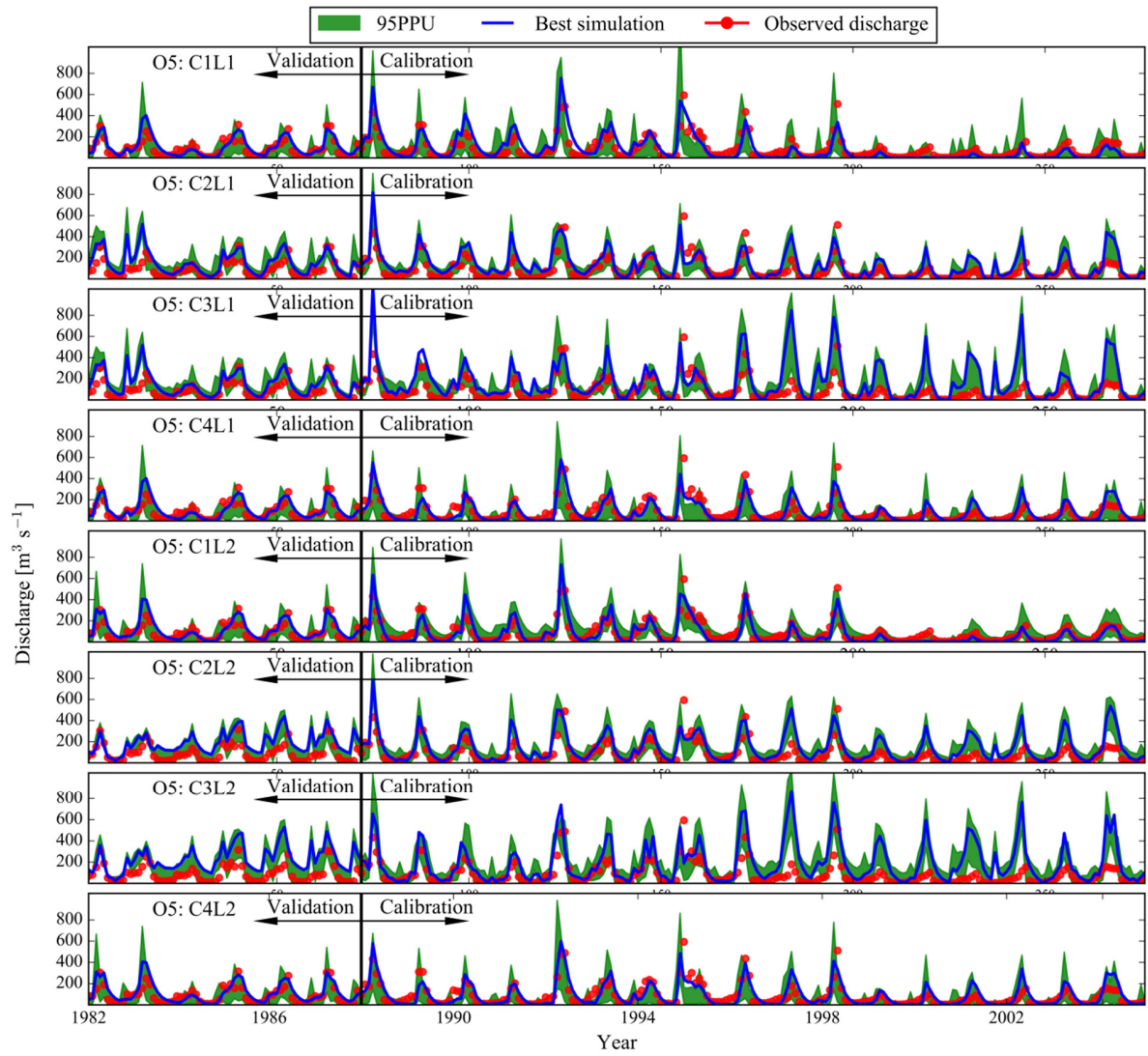


Figure S8. Comparison of simulated and observed discharge values in the O5 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

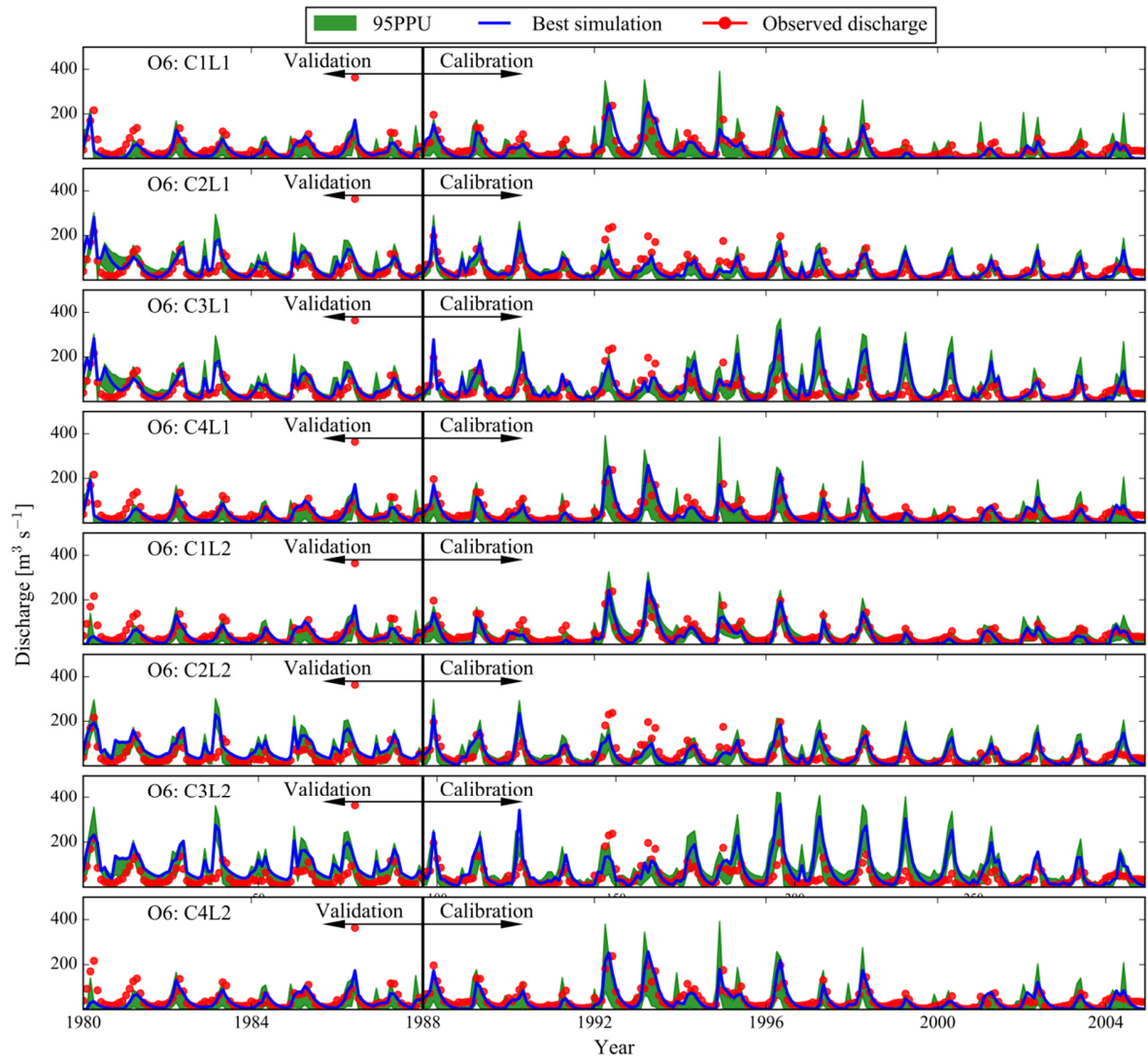


Figure S9. Comparison of simulated and observed discharge values in the O6 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

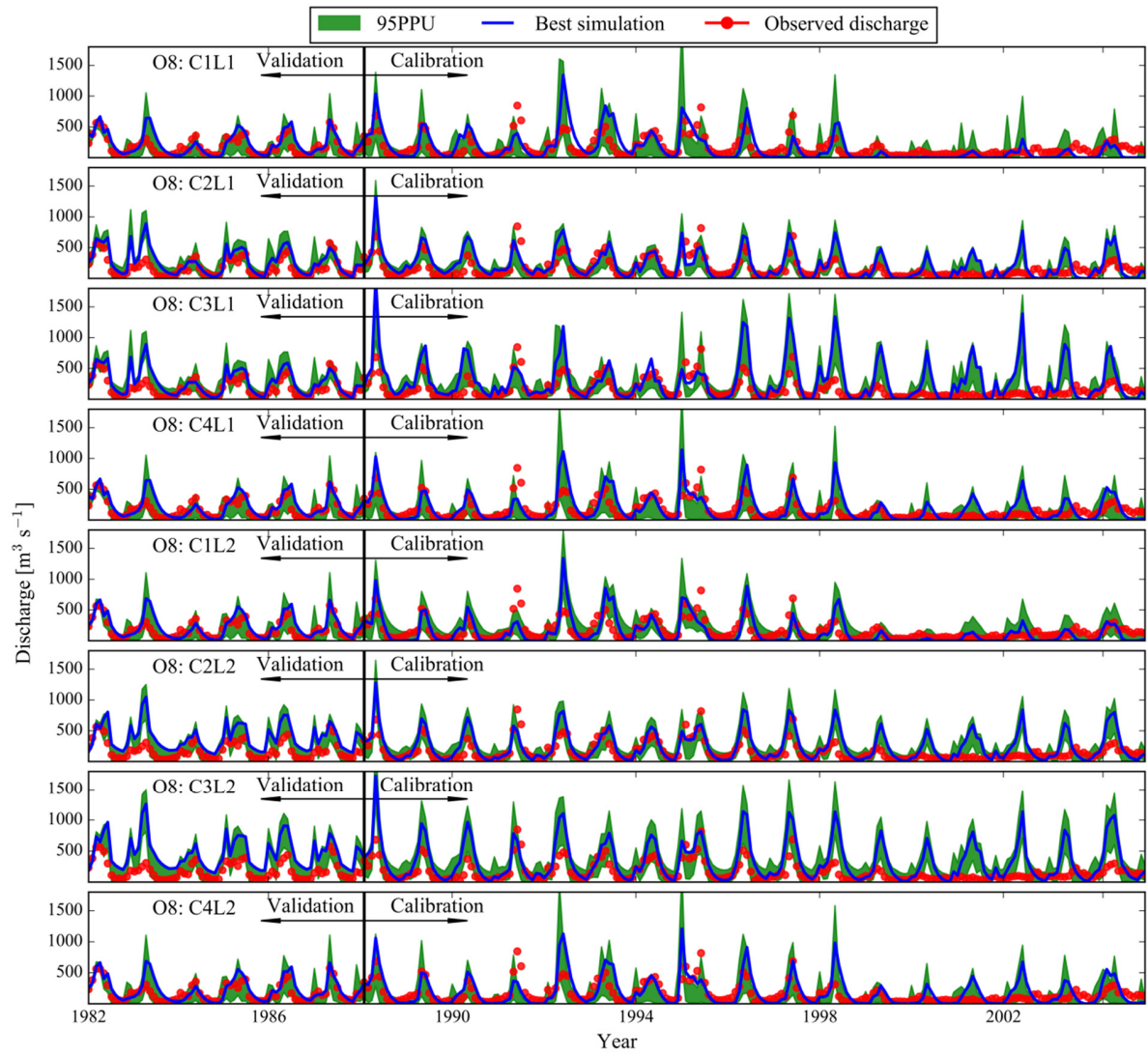


Figure S10. Comparison of simulated and observed discharge values in the O8 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

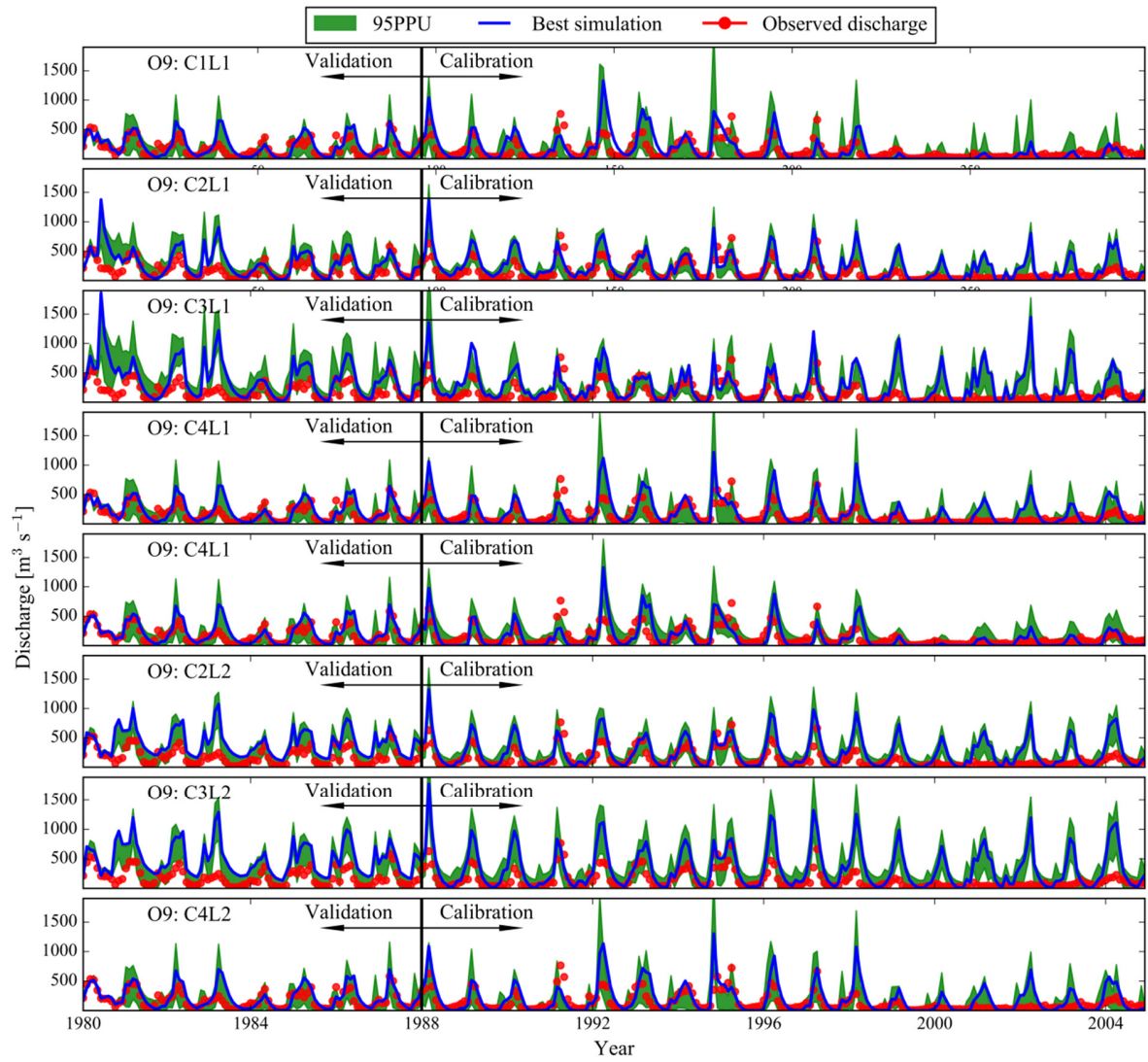


Figure S11. Comparison of simulated and observed discharge values in the O9 outlet (Figure 1) during calibration and validation. The green shaded region is 95% prediction uncertainty band. The best model simulation based on bR^2 is also shown by the blue line.

Table S1. Sensitive SWAT parameters included in the final calibration and their *t-stat* and *P-values*. Details of sensitivity analysis is explained by See Abbaspour [1] for the

Parameter	P-values	t-stat
r_CN2.mgt	48.627574971	0.000000000
r_SOL_AWC.sol	-3.081366148	0.002183605
v_ESCO.hru	4.986028802	0.000000873
r_OV_N.hru	-0.115799682	0.7861618
v_ALPHA_BF.gw	-0.663466093	0.507363005
v_GW_DELAY.gw	-0.622146706	0.534152318
v_GW_REVAP.gw	-0.578452478	0.563240539
r_REVAPMN.gw	1.238760547	0.16063190
v_GWQMN.gw	-4.511929028	0.000008159
r_SLSUBBSN	0.000015479	0.999987657

1. Abbaspour, K.C. *SWAT-CUP; SWAT calibration and uncertainty programs - A user manual*; 2015.