Supplementary material to Evaluating Transferability of Monthly Water Balance Models under Changing Climate Conditions

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A. Introduction

This document provides supplementary material to the paper presenting a thorough evaluation framework, intended for testing hydrological model transferability under changing climate conditions.

The Supplementary material consists of three sections presenting the prior parameter ranges used in model calibration, equations and thresholds for model performance measures used in evaluation framework and simulation results, which are not presented in the paper.

B. Prior parameter ranges used in calibrations

Table S 1. Prior uniform parameter distributions used for the automatic model calibration.

Model	**Parameter**	**Parameter range**	
		min value	max value
abcd	a	0.87	0.999
	b	14	1900
	c	0.01	1
	d	0	1
Budyko	a_1	0.1	0.9
	a_2	0.1	0.9
	S_{max}	50	300
	d	0.1	1
GR2M	X_1	50	300
	X_2	0.2	1
WASMOD	a_1	0	0.1
	a_2	0.001	0.1
	a_3	0	0.1

C. Results

C.1 Statistical efficiency measures

Table S 2. Statistical efficiency measures in the calibration and validation periods. Grey cells denote calibration results. Red cells indicate unacceptable model performance with respect to the defined acceptance ranges.

Statistical measure	**Calibration period**	***abcd***						**Budyko**						**GR2M**						**WASMOD**					
		P1	**P2**	**P3**	**P4**	**P5**	**CP**	**P1**	**P2**	**P3**	**P4**	**P5**	**CP**	**P1**	**P2**	**P3**	**P4**	**P5**	**CP**	**P1**	**P2**	**P3**	**P4**	**P5**	**CP**
KGE	**P1**	0.92	0.85	0.77	0.72	-2.05	0.84	0.95	0.68	0.56	0.47	-1.28	0.69	0.83	0.78	0.69	0.69	-2.65	0.75	0.88	0.56	0.43	0.25	-3.52	0.55
KGE	**P2**	0.78	0.95	0.86	0.73	-1.51	0.84	0.79	0.93	0.75	0.76	-0.70	0.86	0.81	0.82	0.73	0.64	-2.72	0.74	0.70	0.94	0.79	0.68	-2.35	0.84
KGE	**P3**	0.50	0.93	0.89	0.64	-0.88	0.77	0.73	0.91	0.77	0.75	-0.11	0.86	0.78	0.81	0.74	0.63	-2.54	0.72	0.66	0.92	0.80	0.72	-2.22	0.84
KGE	**P4**	0.68	0.86	0.80	0.75	0.54	0.83	0.71	0.88	0.71	0.81	-0.15	0.81	0.75	0.71	0.63	0.79	-1.71	0.74	0.56	0.77	0.75	0.80	-2.36	0.74
KGE	**P5**	0.22	0.51	0.59	0.44	0.80	0.46	0.49	0.74	0.63	0.65	0.78	0.65	0.12	0.10	0.06	0.14	0.85	0.11	-0.06	-0.01	-0.02	0.02	0.76	-0.01
KGE	**CP**	0.87	0.91	0.81	0.79	-0.79	0.90	0.77	0.91	0.76	0.73	-0.30	0.87	0.81	0.79	0.70	0.75	-2.19	0.77	0.69	0.93	0.79	0.68	-2.17	0.85
NSE_{sqrt}	**P1**	0.83	0.84	0.80	0.61	-1.92	0.73	0.84	0.71	0.51	0.45	-0.51	0.65	0.79	0.81	0.72	0.60	-1.37	0.71	0.60	0.55	0.28	0.20	-1.73	0.43
NSE_{sqrt}	**P2**	0.80	0.84	0.81	0.65	-1.02	0.76	0.84	0.79	0.67	0.56	-0.25	0.73	0.79	0.80	0.75	0.61	-1.42	0.71	0.73	0.76	0.62	0.50	-1.17	0.65
NSE_{sqrt}	**P3**	0.72	0.78	0.79	0.60	-0.52	0.73	0.81	0.73	0.65	0.57	0.11	0.72	0.75	0.77	0.75	0.59	-1.40	0.70	0.74	0.77	0.65	0.53	-1.10	0.67
NSE_{sqrt}	**P4**	0.53	0.61	0.53	0.49	0.47	0.59	0.76	0.74	0.68	0.61	0.10	0.72	0.83	0.82	0.77	0.68	-0.63	0.77	0.69	0.71	0.64	0.60	-1.40	0.64
NSE_{sqrt}	**P5**	0.67	0.72	0.61	0.52	0.59	0.68	0.69	0.68	0.67	0.54	0.53	0.69	0.61	0.58	0.48	0.51	0.65	0.60	0.42	0.49	0.38	0.39	0.49	0.49
NSE_{sqrt}	**CP**	0.82	0.84	0.80	0.69	-0.13	0.79	0.83	0.76	0.66	0.56	0.02	0.73	0.81	0.81	0.76	0.65	-0.99	0.74	0.71	0.74	0.58	0.46	-1.00	0.63
RSR	**P1**	0.39	0.33	0.50	0.63	2.17	0.44	0.32	0.49	0.86	0.89	2.32	0.63	0.40	0.41	0.63	0.64	3.10	0.51	0.49	0.60	0.97	1.11	4.33	0.77
RSR	**P2**	0.46	0.33	0.49	0.69	1.97	0.47	0.36	0.38	0.67	0.68	1.85	0.50	0.35	0.36	0.57	0.63	3.11	0.48	0.47	0.35	0.65	0.77	3.16	0.55
RSR	**P3**	0.65	0.38	0.47	0.85	1.57	0.55	0.38	0.41	0.64	0.68	1.31	0.50	0.36	0.36	0.54	0.63	2.92	0.46	0.48	0.35	0.63	0.73	3.02	0.53
RSR	**P4**	0.56	0.43	0.59	0.71	0.68	0.54	0.42	0.42	0.62	0.62	1.25	0.50	0.38	0.40	0.59	0.57	2.36	0.48	0.56	0.42	0.62	0.63	3.05	0.55
RSR	**P5**	0.96	0.68	0.77	1.01	0.62	0.82	0.53	0.49	0.62	0.65	0.66	0.55	0.73	0.74	0.84	0.76	0.55	0.75	0.87	0.82	0.89	0.85	0.68	0.84
RSR	**CP**	0.42	0.33	0.51	0.65	1.62	0.45	0.35	0.39	0.66	0.69	1.48	0.50	0.36	0.37	0.57	0.59	2.71	0.47	0.47	0.36	0.66	0.78	3.05	0.55
VE	**P1**	0.99	0.94	0.94	0.82	-1.89	0.92	1.00	0.80	0.74	0.82	-0.43	0.80	0.92	0.99	0.98	0.77	-1.78	0.86	1.00	0.75	0.72	0.78	-1.53	0.74
VE	**P2**	0.87	1.00	0.99	0.85	-1.22	0.88	0.87	1.00	0.95	0.99	-0.11	0.98	0.86	0.91	0.91	0.69	-1.87	0.79	0.84	1.00	0.98	0.96	-1.20	0.96
VE	**P3**	0.72	0.99	1.00	0.91	-0.69	0.86	0.82	0.97	0.97	0.94	0.27	0.97	0.83	0.89	0.90	0.68	-1.81	0.77	0.82	0.97	0.99	0.98	-1.15	0.99
VE	**P4**	0.74	0.91	1.00	0.96	0.86	0.91	0.86	0.99	0.94	1.00	0.11	0.99	0.93	0.90	0.90	0.94	-1.03	0.99	0.81	0.94	0.98	0.99	-1.44	1.00
VE	**P5**	0.78	0.93	0.99	0.94	0.99	0.94	0.64	0.79	0.83	0.73	1.00	0.76	0.38	0.37	0.36	0.41	0.98	0.40	0.28	0.30	0.31	0.33	0.98	0.32
VE	**CP**	0.96	0.93	0.91	1.00	-0.39	1.00	0.85	0.99	0.94	0.98	0.16	1.00	0.97	0.99	0.99	0.82	-1.42	0.90	0.81	0.97	1.00	0.99	-0.97	1.00

Table S 3. Percentage of acceptable transfers for statistical measures.

Model	Transfer (number of transfers)								
	Calibration (6)	wet-wet (2)	wet-avg (6)	wet-dry (2)	avg-wet (6)	avg-avg (6)	avg-dry (3)	dry-wet (2)	dry-avg (3)
					KGE				
abcd	100	100	100	0	100	100	33	50	33
Budyko	100	100	83	0	100	100	0	50	100
GR2M	100	100	100	0	100	100	0	0	0
WASMOD	100	50	83	0	100	100	0	0	0
					NSEsqrt				
abcd	83	100	100	0	100	100	0	100	100
Budyko	100	100	83	0	100	100	0	100	100
GR2M	100	100	100	0	100	100	0	50	100
WASMOD	83	50	67	0	100	83	0	0	0
					RSR				
abcd	83	100	83	0	100	100	33	0	33
Budyko	100	50	83	0	100	100	0	100	100
GR2M	100	100	100	0	100	100	0	0	0
WASMOD	100	50	50	0	100	67	0	0	0
					VE				
abcd	100	50	100	0	83	100	33	100	100
Budyko	100	50	100	0	100	100	0	50	67
GR2M	100	100	83	0	100	83	0	0	0
WASMOD	100	50	67	0	100	100	0	0	0

Table S 4. Definition of transfers (key for reading tableplots): CAL = calibration, wet = wet period, avg = average period, dry = dry period.

		Calibration period					
		P1	P2	P3	P4	P5	CP
Validation period	CP	wet-avg	avg-avg	wet-avg	avg-avg	dry-avg	CAL
	P5	wet-dry	avg-dry	wet-dry	avg-dry	CAL	avg-dry
	P4	wet-avg	avg-avg	wet-avg	CAL	dry-avg	avg-avg
	P3	wet-wet	avg-wet	CAL	avg-wet	dry-wet	avg-wet
	P2	wet-avg	CAL	wet-avg	avg-avg	dry-avg	avg-avg
	P1	CAL	avg-wet	wet-wet	avg-wet	dry-wet	avg-wet

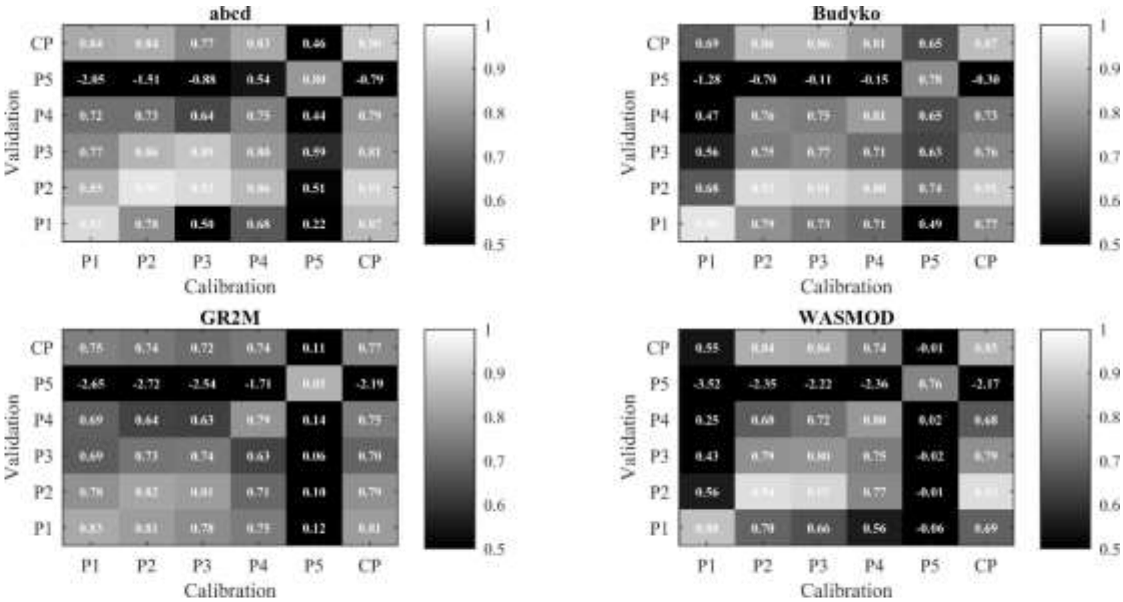

Figure S 1. Kling-Gupta efficiency, KGE. Black cells denote simulations with KGE outside the acceptance range (KGE < 0.5).

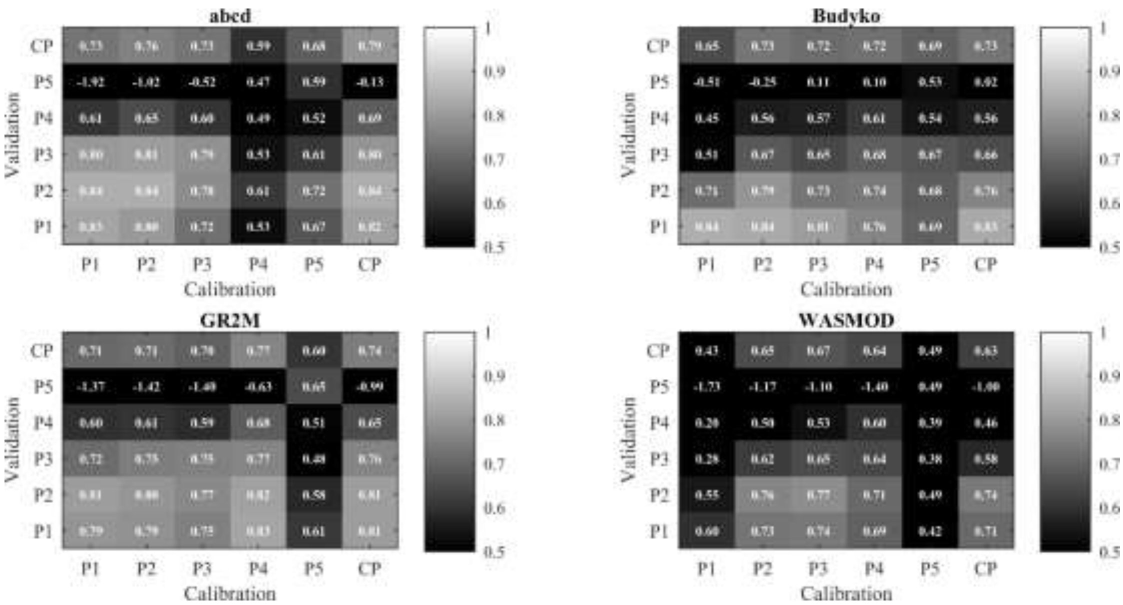

Figure S 2. Nash-Sutcliffe efficiency computed from square-root flows, NSE_{sqrt}. Black cells denote simulations with NSE_{sqrt} outside the acceptance range ($NSE_{sqrt} < 0.5$).

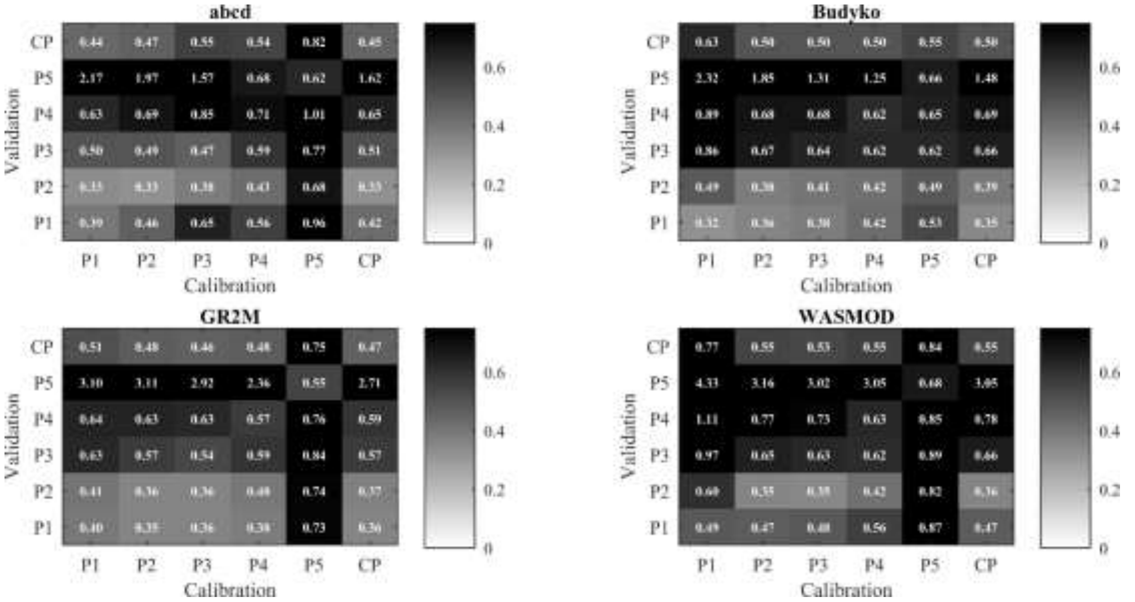

Figure S 3. Ratio between RMSE and observed standard deviation, RSR. Black cells denote simulations with RSR outside the acceptance range (RSR > 0.7).

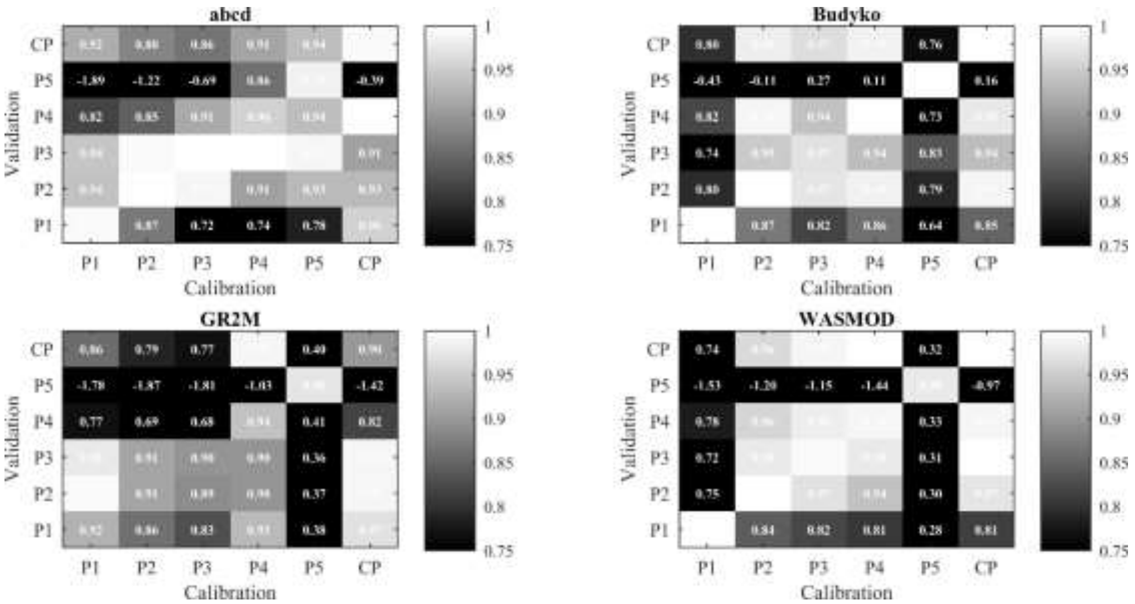

Figure S 4. Volumetric efficiency VE. Black cells denote simulations with VE outside the acceptance range (VE < 0.75).

C.2 Hydrological signatures

Table S 5. Errors in hydrological signatures. Grey cells denote calibrations and red cells denote unacceptable model performance with respect to the defined acceptance ranges.

Hydrological signatures	Calibration period	abcd						Budyko						GR2M						WASMOD					
		P1	P2	P3	P4	P5	CP	P1	P2	P3	P4	P5	CP	P1	P2	P3	P4	P5	CP	P1	P2	P3	P4	P5	CP
εQ_{95}	P1	0.02	0.00	0.01	0.26	1.36	0.10	0.10	0.24	0.26	0.10	1.71	0.30	0.26	0.16	0.24	0.19	2.45	0.10	0.17	0.42	0.33	0.52	4.51	0.47
	P2	0.16	0.17	0.12	0.20	1.35	0.01	0.10	0.04	0.05	0.19	1.45	0.06	0.18	0.12	0.18	0.25	2.43	0.03	0.10	0.01	0.01	0.13	2.88	0.13
	P3	0.32	0.25	0.12	0.37	0.87	0.08	0.13	0.14	0.00	0.29	0.73	0.03	0.15	0.02	0.15	0.30	2.48	0.05	0.13	0.04	0.03	0.06	2.72	0.10
	P4	0.24	0.22	0.16	0.28	0.42	0.00	0.18	0.20	0.16	0.36	0.60	0.13	0.31	0.25	0.31	0.36	1.78	0.18	0.19	0.10	0.14	0.16	2.62	0.13
	P5	0.76	0.59	0.72	0.01	0.09	0.28	0.30	0.16	0.17	0.29	0.01	0.19	0.68	0.61	0.67	0.74	0.15	0.65	0.75	0.72	0.70	0.75	0.01	0.71
	CP	0.07	0.06	0.09	0.19	1.18	0.01	0.08	0.06	0.01	0.24	0.91	0.01	0.24	0.18	0.25	0.31	2.11	0.10	0.09	0.02	0.02	0.15	2.83	0.14
εQ_{80}	P1	0.45	0.09	0.14	0.38	1.45	0.18	0.24	0.71	0.83	0.29	0.36	0.25	0.97	0.71	0.91	0.48	1.64	0.68	0.21	0.37	0.89	0.20	0.21	0.01
	P2	0.67	0.17	0.21	0.31	1.12	0.23	0.05	0.37	0.67	0.20	0.09	0.09	1.12	0.93	0.95	0.66	1.52	0.93	0.45	0.52	0.80	0.03	1.20	0.16
	P3	0.63	0.14	0.06	0.32	0.89	0.25	0.06	0.26	0.61	0.34	0.04	0.00	1.15	1.06	1.10	0.82	1.55	0.96	0.45	0.51	0.76	0.01	1.23	0.18
	P4	0.77	0.30	0.04	0.00	0.45	0.16	0.44	0.52	0.71	0.18	0.47	0.28	0.71	0.55	0.59	0.29	0.90	0.54	0.76	0.80	0.87	0.34	1.65	0.53
	P5	0.37	0.55	0.46	0.52	0.42	0.56	0.18	0.04	0.36	0.60	0.37	0.26	0.37	0.41	0.34	0.52	0.41	0.49	0.47	0.44	0.45	0.60	0.23	0.58
	CP	0.36	0.06	0.11	0.16	0.58	0.05	0.06	0.43	0.66	0.36	0.05	0.00	0.91	0.76	0.78	0.48	1.20	0.74	0.37	0.21	0.78	0.22	0.78	0.00
εQ_{50}	P1	0.49	0.09	0.15	0.34	25.92	0.54	0.27	0.45	0.47	0.69	2.99	0.49	1.11	0.27	0.05	0.12	11.0	0.54	0.90	0.97	0.98	0.99	0.91	0.98
	P2	0.59	0.24	0.17	0.10	18.48	0.33	0.02	0.17	0.02	0.54	4.31	0.28	1.53	0.15	0.16	0.22	13.8	0.61	0.42	0.79	0.71	0.77	1.35	0.66
	P3	0.86	0.00	0.03	0.06	15.88	0.38	0.43	0.52	0.58	0.64	2.33	0.59	1.59	0.20	0.38	0.25	16.52	0.75	0.30	0.76	0.68	0.75	1.67	0.63
	P4	0.95	0.46	0.09	0.05	4.53	0.40	0.35	0.45	0.11	0.19	4.41	0.11	0.93	0.10	0.15	0.15	9.34	0.18	0.06	0.63	0.68	0.79	3.94	0.55
	P5	0.23	0.61	0.67	0.57	3.68	0.44	0.42	0.57	0.60	0.75	0.41	0.64	0.45	0.79	0.74	0.76	1.02	0.71	0.66	0.83	0.81	0.83	1.25	0.74
	CP	0.29	0.42	0.43	0.30	10.11	0.08	0.30	0.46	0.37	0.70	2.77	0.52	1.21	0.00	0.01	0.05	11.5	0.39	0.67	0.87	0.86	0.88	0.18	0.81
εQ_{20}	P1	0.91	1.74	1.05	4.50	5460	4.97	-0.47	-0.87	-0.86	-0.77	94.7	-0.74	1.23	-0.20	-0.18	0.54	889	0.97	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
	P2	0.84	0.72	0.30	2.25	2928	2.51	0.02	-0.64	-0.47	-0.49	203	-0.29	1.45	0.12	0.08	0.77	1109	1.42	-0.84	-0.94	-0.90	-0.90	113.1	-0.85
	P3	1.46	0.83	0.38	1.86	1917	2.21	-0.59	-0.92	-0.88	-0.82	106	-0.78	1.77	0.69	0.58	1.33	1416	1.92	-0.76	-0.90	-0.88	-0.84	147.5	-0.79
	P4	2.04	2.53	1.80	1.75	901	1.84	0.34	-0.12	0.02	0.10	512	0.49	0.67	-0.36	-0.30	0.27	631	0.49	-0.56	-0.84	-0.79	-0.72	225.0	-0.65
	P5	0.54	0.58	-0.10	0.66	623	1.02	-0.67	-0.89	-0.78	-0.80	86.2	-0.75	-0.65	-0.90	-0.89	-0.80	75.5	-0.76	-0.71	-0.88	-0.92	-0.81	136.1	-0.77
	CP	0.33	-0.02	-0.48	0.39	971	0.65	-0.34	-0.84	-0.86	-0.76	106	-0.68	1.04	-0.14	-0.11	0.43	856	0.93	-0.90	-0.98	-0.95	-0.96	42.34	-0.94
εQ_{5}	P1	4.16	54.55	13.23	46.50	-99	-99	-0.94	-1.00	-0.96	-1.00	-99	-99	0.52	2.08	-0.01	2.26	-99	-99	-1.00	-1.00	-1.00	-1.00	-99	-99
	P2	2.27	20.40	5.66	21.41	-99	-99	-0.68	-0.41	-0.71	-0.58	-99	-99	1.70	6.37	0.80	4.87	-99	-99	-0.91	-0.63	-0.95	-0.74	-99	-99
	P3	2.72	20.49	2.85	12.54	-99	-99	-0.92	-1.00	-0.97	-1.00	-99	-99	2.23	11.91	2.22	7.61	-99	-99	-0.88	-0.43	-0.92	-0.55	-99	-99
	P4	5.25	30.03	6.72	11.44	-99	-99	0.47	0.56	1.32	0.87	-99	-99	0.42	2.75	-0.14	1.94	-99	-99	-1.00	-0.36	-0.86	-0.18	-99	-99
	P5	2.17	30.22	3.93	10.82	-99	-99	-0.83	-1.00	-0.84	-0.88	-99	-99	-0.81	-0.69	-0.95	-0.77	-99	-99	-0.87	-0.47	-0.93	-0.72	-99	-99
	CP	0.53	5.64	0.47	3.60	-99	-99	-0.87	-1.00	-0.91	-0.91	-99	-99	1.03	4.34	0.29	3.31	-99	-99	-0.98	-1.00	-1.00	-1.00	-99	-99
εBFI	P1	0.05	0.06	0.08	0.13	0.32	0.11	-0.01	-0.03	-0.02	-0.07	-0.02	-0.03	0.06	0.01	0.01	-0.02	0.03	0.02	-0.03	-0.04	-0.04	-0.10	-0.05	-0.05
	P2	0.03	0.02	0.04	0.04	0.19	0.05	0.02	-0.01	0.00	-0.05	0.00	0.00	0.06	0.02	0.02	-0.01	0.05	0.03	-0.02	-0.03	-0.03	-0.08	-0.03	-0.03
	P3	0.04	0.02	0.03	0.02	0.13	0.04	-0.02	-0.03	-0.02	-0.08	-0.02	-0.03	0.08	0.03	0.03	0.01	0.07	0.04	-0.02	-0.03	-0.02	-0.08	-0.03	-0.03
	P4	0.20	0.15	0.15	0.21	0.28	0.18	0.07	0.02	0.03	0.00	0.04	0.03	0.05	0.01	0.01	-0.02	0.03	0.02	-0.01	-0.03	-0.02	-0.07	-0.03	-0.03
	P5	0.00	0.01	0.00	0.00	0.14	0.01	0.01	-0.02	-0.01	-0.06	0.01	-0.01	0.01	-0.01	0.00	-0.04	0.02	-0.01	0.00	-0.01	-0.02	-0.06	0.00	-0.02
	CP	0.01	0.00	0.00	-0.03	0.05	0.00	0.00	-0.02	-0.01	-0.07	-0.01	-0.02	0.05	0.01	0.02	-0.01	0.04	0.02	-0.03	-0.03	-0.03	-0.09	-0.04	-0.04
εIAFD	P1	0.25	0.15	0.26	0.28	2.89	0.19	0.15	0.31	0.59	0.51	1.52	0.34	0.21	0.15	0.34	0.33	2.78	0.19	0.41	0.56	0.74	0.72	2.90	0.64
	P2	0.34	0.20	0.27	0.28	2.22	0.25	0.23	0.08	0.35	0.31	1.15	0.17	0.22	0.16	0.30	0.36	2.87	0.24	0.33	0.28	0.51	0.48	2.47	0.40
	P3	0.51	0.32	0.30	0.36	1.69	0.36	0.28	0.11	0.31	0.25	0.83	0.13	0.27	0.21	0.31	0.37	2.81	0.28	0.32	0.25	0.48	0.44	2.41	0.38
	P4	0.44	0.44	0.45	0.47	0.46	0.36	0.36	0.17	0.27	0.21	0.89	0.14	0.17	0.15	0.26	0.20	2.03	0.11	0.31	0.21	0.38	0.33	2.68	0.28
	P5	0.60	0.46	0.41	0.38	0.35	0.42	0.46	0.26	0.29	0.27	0.23	0.26	0.62	0.63	0.64	0.59	0.24	0.60	0.72	0.70	0.69	0.67	0.45	0.68
	CP	0.29	0.17	0.29	0.25	1.39	0.21	0.24	0.09	0.35	0.29	0.93	0.15	0.19	0.13	0.27	0.27	2.42	0.14	0.33	0.29	0.52	0.46	2.28	0.41
εSEL	P1	1.09	0.55	0.15	0.51	0.94	0.56	0.44	1.15	0.27	0.96	0.80	0.30	0.29	1.78	0.01	0.09	0.23	0.30	0.43	1.56	1.05	0.67	0.32	0.40
	P2	1.06	0.01	0.11	0.24	0.53	0.28	0.36	1.04	0.08	0.92	0.60	0.33	0.75	2.13	0.05	0.12	0.18	0.44	0.59	1.72	0.65	0.68	0.74	0.04
	P3	1.24	1.23	0.67	0.03	0.30	0.13	0.12	0.94	0.37	0.94	0.79	0.39	0.92	2.29	0.20	0.11	0.11	0.45	0.65	1.75	0.61	0.70	0.75	0.05
	P4	1.61	0.58	0.93	0.45	0.81	0.74	0.01	1.11	0.14	0.79	0.72	0.03	0.58	1.95	0.11	0.08	0.23	0.25	0.60	1.98	0.54	0.94	0.70	0.33
	P5	1.04	2.31	2.23	0.01	0.37	0.06	0.59	0.52	0.33	1.02	0.93	0.68	0.71	1.25	0.55	0.05	0.30	0.04	0.75	2.24	0.29	0.50	0.52	0.20
	CP	0.95	0.01	0.40	0.06	0.14	0.12	0.15	0.96	0.29	0.96	0.76	0.37	0.69	2.05	0.03	0.10	0.20	0.38	0.23	1.67	0.88	0.65	0.69	0.03
εAC1	P1	0.01	0.03	0.17	0.16	0.05	0.05	0.08	0.13	0.12	0.29	0.30	0.13	0.02	0.16	0.14	0.22	0.04	0.10	0.15	0.11	0.13	0.13	0.11	0.11
	P2	0.01	0.02	0.18	0.17	0.06	0.04	0.00	0.09	0.07	0.29	0.44	0.09	0.08	0.19	0.23	0.25	0.02	0.17	0.16	0.11	0.16	0.18	0.07	0.13
	P3	0.02	0.04	0.19	0.15	0.11	0.04	0.16	0.15	0.22	0.34	0.19	0.19	0.15	0.21	0.28	0.27	0.06	0.21	0.17	0.12	0.17	0.19	0.06	0.14
	P4	0.08	0.01	0.15	0.16	0.07	0.08	0.13	0.15	0.19	0.36	0.20	0.18	0.07	0.18	0.22	0.25	0.01	0.15	0.32	0.25	0.30	0.30	0.07	0.27
	P5	0.11	0.15	0.04	0.04	0.02	0.09	0.23	0.15	0.30	0.38	0.07	0.22	0.05	0.14	0.23	0.23	0.00	0.13	0.12	0.11	0.16	0.18	0.11	0.12
	CP	0.02	0.01	0.16	0.15	0.04	0.04	0.11	0.13	0.18	0.33	0.27	0.16	0.08	0.19	0.23	0.25	0.02	0.16	0.15	0.10	0.15	0.17	0.09	0.12
εAC12	P1	0.11	0.07	0.14	0.03	0.09	0.06	0.02	0.05	0.16	0.11	0.01	0.02	0.00	0.04	0.17	0.12	0.07	0.05	0.17	0.03	0.31	0.11	0.16	0.13
	P2	0.11	0.06	0.12	0.02	0.09	0.06	0.03	0.10	0.09	0.10	0.02	0.02	0.07	0.06	0.21	0.11	0.10	0.09	0.23	0.02	0.29	0.12	0.24	0.14
	P3	0.13	0.01	0.05	0.01	0.11	0.04	0.09	0.08	0.17	0.09	0.02	0.02	0.13	0.06	0.21	0.10	0.09	0.11	0.24	0.03	0.29	0.12	0.25	0.14
	P4	0.10	0.03	0.03	0.11	0.13	0.01	0.08	0.13	0.11	0.10	0.04	0.01	0.07	0.05	0.21	0.11	0.09	0.09	0.29	0.07	0.34	0.21	0.33	0.21
	P5	0.05	0.00	0.00	0.13	0.05	0.04	0.15	0.14	0.16	0.08	0.01	0.01	0.08	0.03	0.18	0.08	0.05	0.06	0.24	0.02	0.20	0.10	0.23	0.11
	CP	0.10	0.07	0.13	0.02	0.08	0.06	0.07	0.09	0.15	0.10	0.00	0.01	0.07	0.05	0.21	0.11	0.10	0.09	0.22	0.02	0.28	0.10	0.21	0.13
εSTD	P1	0.00	0.13	0.18	0.05	0.97	0.10	0.00	0.24	0.20	0.46	1.76	0.19	0.12	0.20	0.21	0.02	2.37	0.14	0.01	0.35	0.43	0.67	3.73	0.33
	P2	0.16	0.00	0.06	0.07	1.15	0.04	0.16	0.00	0.06	0.12	1.24	0.04	0.11	0.14	0.18	0.06	2.37	0.11	0.23	0.00	0.03	0.22	2.52	0.02
	P3	0.40	0.01	0.00	0.05	0.80	0.13	0.18	0.04	0.06	0.16	0.80	0.03	0.12	0.14	0.18	0.03	2.14	0.12	0.27	0.05	0.02	0.16	2.38	0.07
	P4	0.15	0.04	0.06	0.03	0.35	0.03	0.25	0.08	0.17	0.02	0.68	0.13	0.24	0.26	0.30	0.09	1.79	0.24	0.38	0.21	0.14	0.01	2.29	0.19
	P5	0.74	0.48	0.37	0.49	0.00	0.52	0.35	0.11	0.25	0.06	0.00	0.20	0.63	0.65	0.68	0.59	0.02	0.64	0.77	0.73	0.73	0.68	0.02	0.73
	CP	0.10	0.03	0.09	0.05	1.11	0.00	0.16	0.06	0.03	0.19	0.95	0.01	0.18	0.20	0.24	0.02	2.06	0.17	0.22	0.01	0.04	0.23	2.47	0.01
εQ_{med}	P1	0.52	0.11	0.13	0.34	29.30	0.54	0.25	0.50	0.53	0.71	3.04	0.50	1.15	0.28	0.05	0.14	12.59	0.51	0.90	0.98	0.99	0.99	0.91	0.98
	P2	0.60	0.25	0.15	0.08	20.87	0.31	0.04	0.22	0.09	0.53	5.00	0.28	1.60	0.15	0.12	0.25	15.31	0.61	0.45	0.79	0.73	0.77	1.58	0.66
	P3	0.88	0.08	0.00	0.07	17.82	0.38	0.42	0.55	0.57	0.67	2.78	0.60	1.66	0.20	0.33	0.26	18.79	0.75	0.32	0.78	0.71	0.74	1.87	0.63
	P4	0.99	0.46	0.04	0.03	5.26	0.40	0.34	0.44	0.13	0.20	5.12	0.11	0.97	0.12	0.18	0.13	10.37	0.17	0.07	0.63	0.67	0.78	4.34	0.55
	P5	0.21	0.61	0.66	0.56	4.06	0.44	0.46	0.58	0.60	0.75	0.59	0.64	0.45	0.80	0.75	0.76	1.29	0.71	0.65	0.84	0.81	0.83	1.46	0.74
	CP	0.33	0.44	0.42	0.31	11.36	0.08	0.30	0.48	0.36	0.72	3.22	0.52	1.27	0.01	0.02	0.07	12.66	0.38	0.67	0.88	0.86	0.88	0.33	0.81
εP0	P1	0.00	0.02	0.00	0.02	0.24	0.06	0.01	0.08	0.03	0.05	0.18	0.00	0.00	0.02	0.00	0.02	0.24	0.06	0.26	0.35	0.32	0.36	0.18	0.30
	P2	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.00	0.00	0.00	0.23	0.05	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.00	0.02	0.01	0.24	0.05
	P3	0.00	0.02	0.00	0.02	0.24	0.06	0.03	0.07	0.04	0.07	0.18	0.01	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.01	0.01	0.01	0.24	0.05
	P4	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.00	0.00	0.02	0.24	0.05	0.00	0.02	0.00	0.02	0.24	0.06	0.06	0.03	0.03	0.00	0.24	0.02
	P5	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.04	0.01	0.01	0.22	0.03	0.01	0.01	0.01	0.00	0.23	0.04	0.00	0.00	0.01	0.02	0.24	0.05
	CP	0.00	0.02	0.00	0.02	0.24	0.06	0.00	0.04	0.01	0.03	0.19	0.02	0.00	0.02	0.00	0.02	0.24	0.06	0.05	0.11	0.09	0.08	0.16	0.04
εD20	P1	0.06	0.13	0.11	0.17	0.53	0.20	0.16	0.22	0.17	0.17	0.15	0.11	0.03	0.00	0.03	0.10	0.43	0.12	0.41	0.43	0.40	0.41	0.06	0.34
	P2	0.06	0.13	0.11	0.17	0.53	0.20	0.08	0.10	0.06	0.02	0.24	0.01	0.05	0.04	0.07	0.14	0.48	0.16	0.22	0.24	0.24	0.19	0.06	0.16
	P3	0.06	0.11	0.11	0.17	0.53	0.20	0.16	0.25	0.17	0.17	0.15	0.12	0.06	0.08	0.10	0.16	0.53	0.19	0.19	0.24	0.20	0.19	0.10	0.14
	P4	0.06	0.13	0.11	0.17	0.50	0.19	0.03	0.02	0.07	0.07	0.32	0.10	0.02	0.01	0.04	0.08	0.39	0.10	0.15	0.19	0.13	0.13	0.19	0.08
	P5	0.06	0.13	0.11	0.17	0.42	0.17	0.13	0.20	0.14	0.19	0.04	0.12	0.17	0.23	0.19	0.22	0.09	0.14	0.17	0.23	0.21	0.16	0.07	0.14
	CP	0.02	0.04	0.05	0.11	0.45	0.14	0.13	0.19	0.15	0.13	0.18	0.08	0.04	0.02	0.05	0.11	0.44	0.13	0.27	0.27	0.29	0.27	0.01	0.22

Table S 6. Percentage of acceptable transfers for hydrologic signatures.

Model	Transfer (number of transfers)								
	Calibration (6)	wet-wet (2)	wet-avg (6)	wet-dry (2)	avg-wet (6)	avg-avg (6)	avg-dry (3)	dry-wet (2)	dry-avg (3)
	εIAFD								
abcd	50	0	33	0	0	33	0	0	0
Budyko	83	0	50	0	33	67	0	0	0
GR2M	83	0	50	0	50	67	0	0	0
WASMOD	0	0	0	0	0	17	0	0	0
	εBFI								
abcd	67	100	67	0	67	67	33	100	100
Budyko	100	100	100	100	100	100	100	100	100
GR2M	100	100	100	100	100	100	100	100	100
WASMOD	100	100	100	100	100	100	100	100	100
	εP0								
abcd	83	100	100	0	100	100	0	100	100
Budyko	83	100	100	0	100	100	0	100	100
GR2M	83	100	100	0	100	100	0	100	100
WASMOD	67	50	50	0	100	83	0	100	100
	εSTD								
abcd	100	50	100	0	100	100	0	0	0
Budyko	100	100	83	0	100	100	0	50	100
GR2M	100	100	100	0	83	83	0	0	0
WASMOD	100	0	50	0	83	100	0	0	0
	εSEL								
abcd	33	50	33	0	17	50	33	0	67
Budyko	17	100	17	0	83	17	0	50	0
GR2M	50	50	50	50	50	50	67	0	67
WASMOD	17	0	17	0	17	17	0	50	33
	εAC1								
abcd	100	100	100	100	100	100	100	100	100
Budyko	67	100	67	50	100	67	0	0	33
GR2M	67	100	33	100	50	67	100	50	67
WASMOD	83	100	100	100	67	67	100	100	100
	εAC12								
abcd	100	100	100	100	100	100	100	100	100
Budyko	100	100	100	100	100	100	100	100	100
GR2M	83	100	100	100	50	100	100	100	100
WASMOD	50	0	100	50	0	83	0	0	100
	εD20								
abcd	17	50	0	0	67	17	0	50	0
Budyko	50	0	0	0	67	67	0	0	0
GR2M	67	100	33	0	100	33	0	0	0
WASMOD	17	0	0	50	0	17	67	0	0
	εQ5								
abcd	0	0	0	0	0	0	0	0	0
Budyko	0	0	0	0	0	0	0	0	0
GR2M	0	50	0	0	17	0	0	0	0
WASMOD	17	0	0	0	0	0	0	0	0
	εQ20								
abcd	0	0	0	0	0	17	0	50	0
Budyko	17	0	0	0	33	17	0	0	0
GR2M	17	50	17	0	33	17	0	0	0
WASMOD	0	0	0	0	0	0	0	0	0
	εQ50								
abcd	67	50	50	0	33	17	0	50	0
Budyko	33	0	0	0	50	17	0	0	0
GR2M	33	50	33	0	50	83	0	0	0
WASMOD	0	0	0	0	17	0	33	0	0
	εQ80								
abcd	67	50	67	0	50	67	0	0	0
Budyko	50	50	17	50	33	33	67	50	33
GR2M	0	0	0	0	0	0	0	0	0
WASMOD	50	0	67	50	0	67	0	0	0

Model	Transfer (number of transfers)								
	Calibration (6)	wet-wet (2)	wet-avg (6)	wet-dry (2)	avg-wet (6)	avg-avg (6)	avg-dry (3)	dry-wet (2)	dry-avg (3)
					εQ95				
abcd	83	50	50	0	100	100	0	0	33
Budyko	83	50	67	0	100	100	0	50	67
GR2M	67	100	83	0	67	83	0	0	0
WASMOD	100	50	50	0	100	100	0	0	0

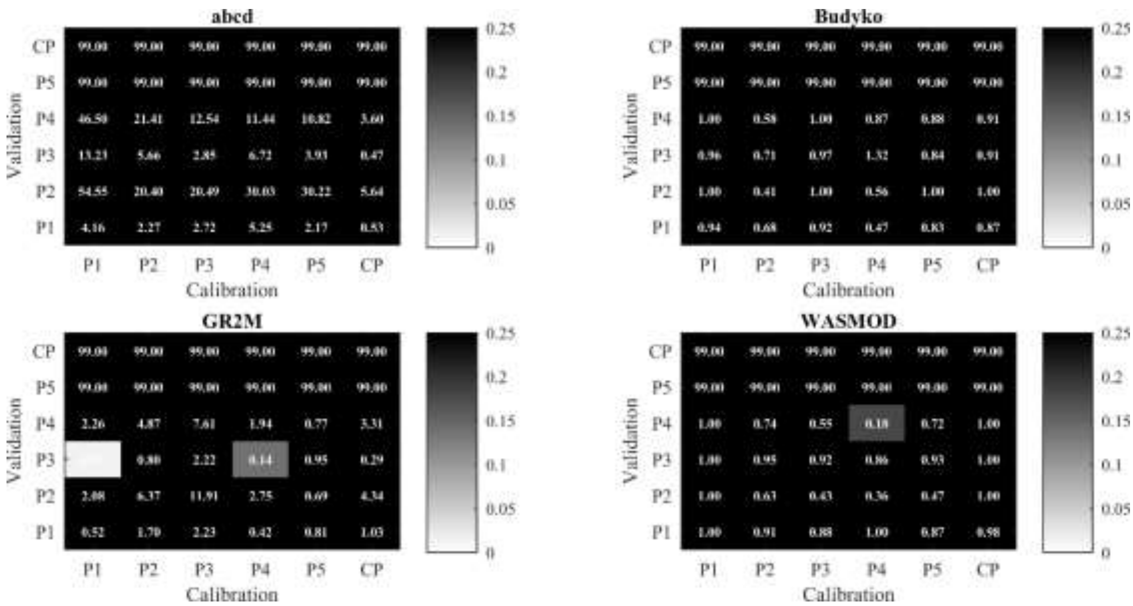

Figure S 5. Errors in low flows error (5th flow percentile), ε_{Q5}. Black cells denote simulations with ε_{Q5} outside the acceptance range ($\varepsilon_{Q5} > 0.25$).

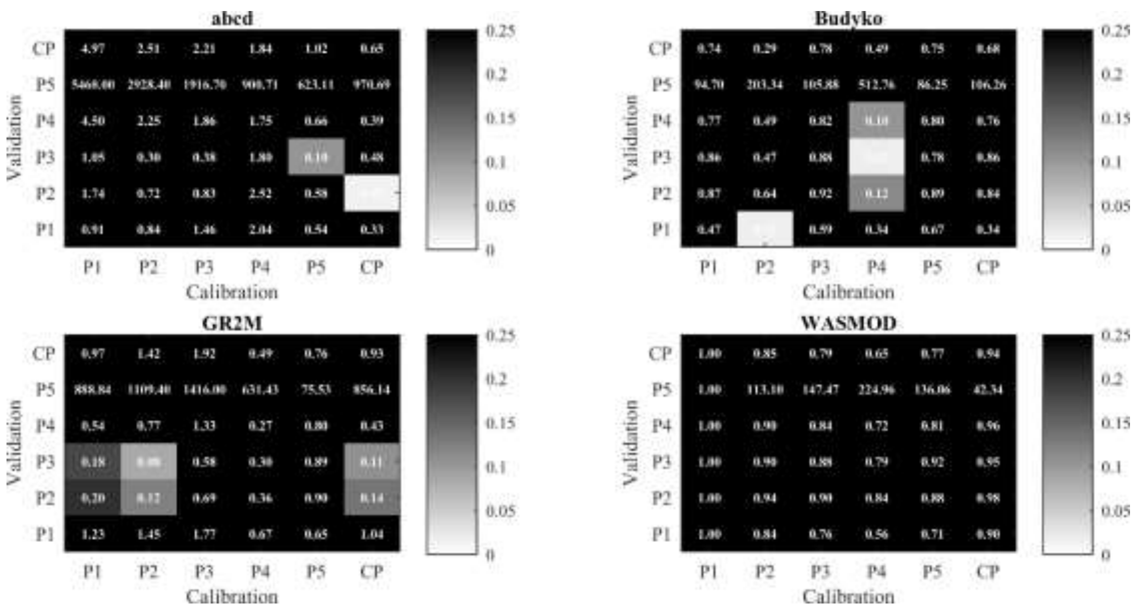

Figure S 6. Errors in low flows error (20th flow percentile), ε_{Q20}. Black cells denote simulations with ε_{Q20} outside the acceptance range ($\varepsilon_{Q20} > 0.25$).

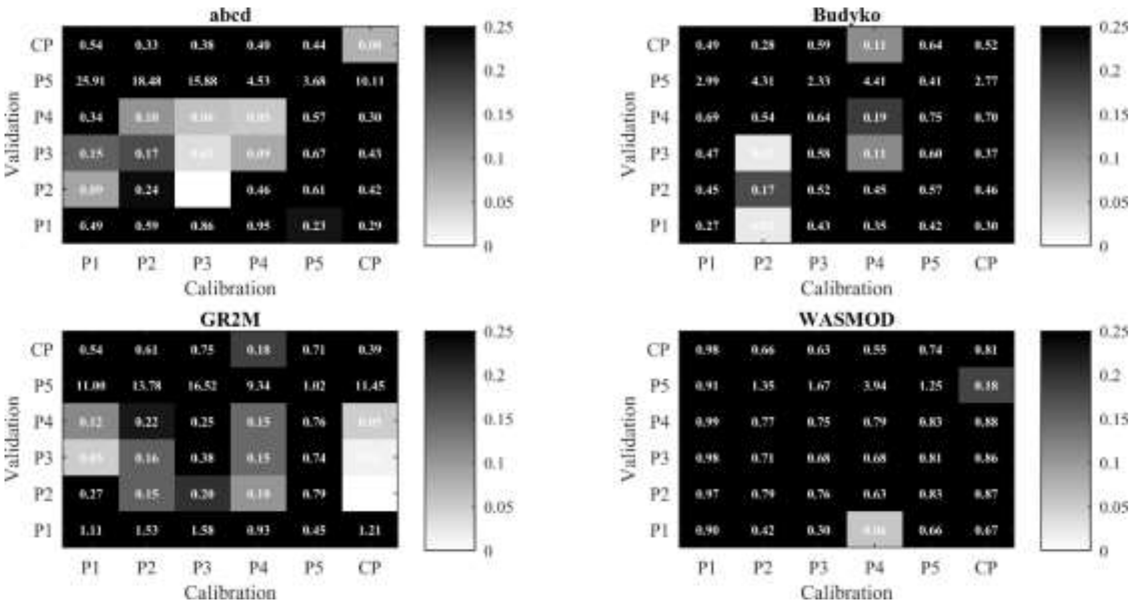

Figure S 7. Errors in mid flows error (50th flow percentile), ε_{Q50}. Black cells denote simulations with ε_{Q50} outside the acceptance range (ε_{Q50} > 0.25).

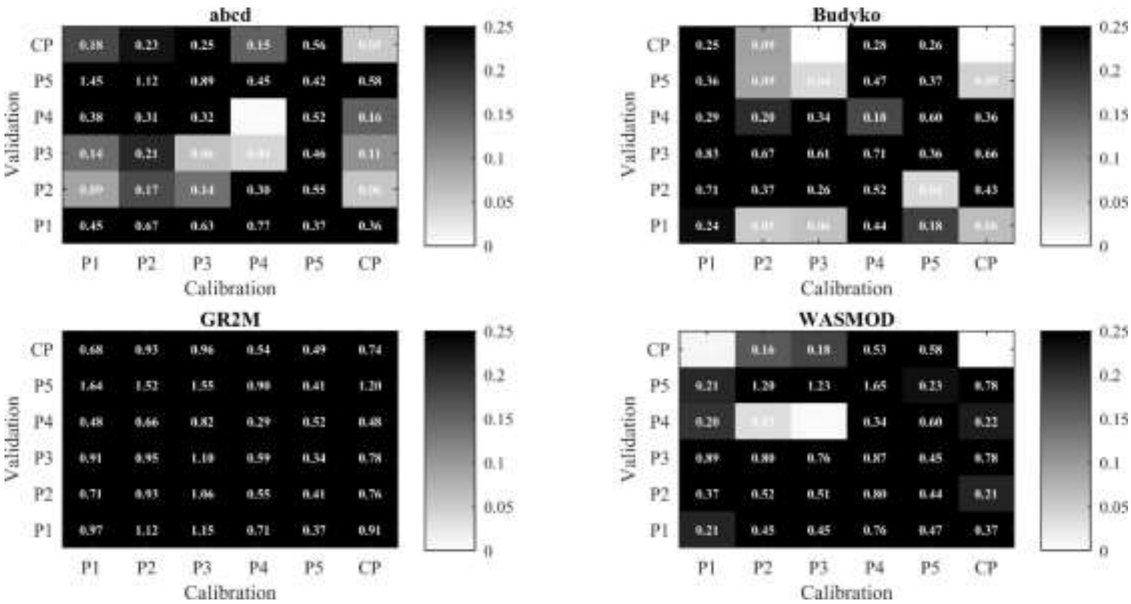

Figure S 8. Errors in high flows error (80th flow percentile), ε_{Q80}. Black cells denote simulations with ε_{Q80} outside the acceptance range (ε_{Q80} > 0.25).

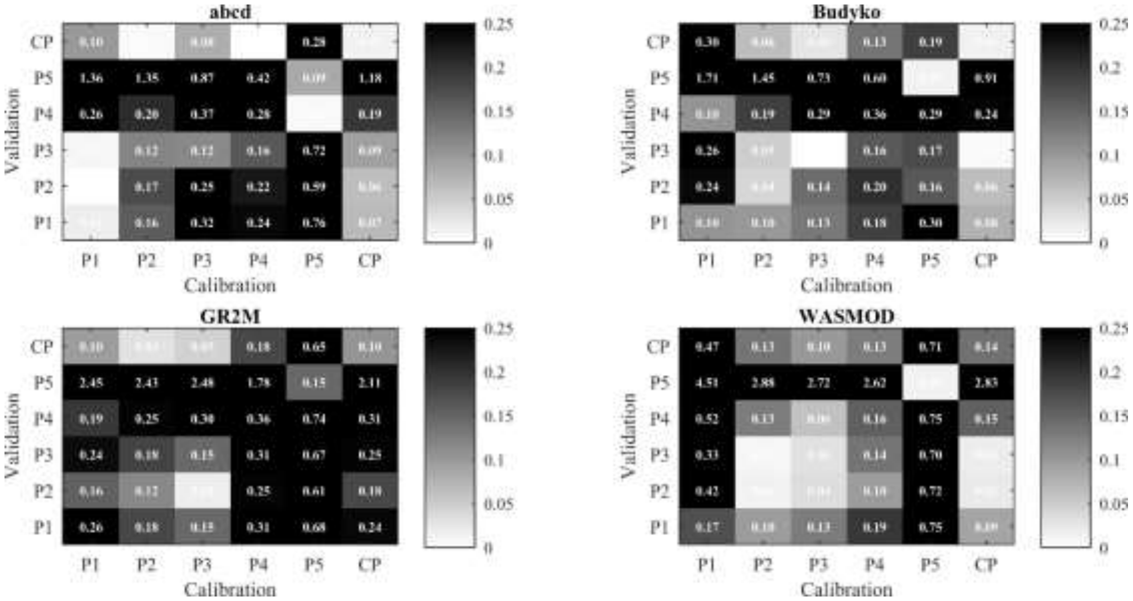

Figure S 9. Errors in high flows (95th flow percentile), ε_{Q95}. Black cells denote simulations with ε_{Q95} outside the acceptance range (ε_{Q95} > 0.25).

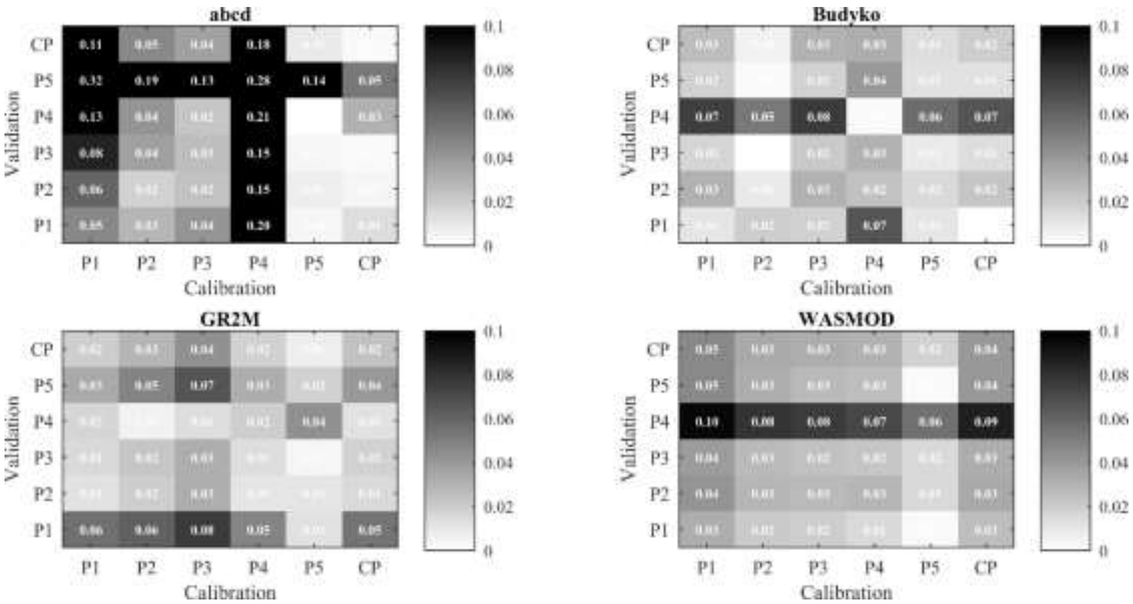

Figure S 10. Errors in baseflow index, ε_{BFI}. Black cells denote simulations with ε_{BFI} outside the acceptance range (ε_{BFI} > 0.1).

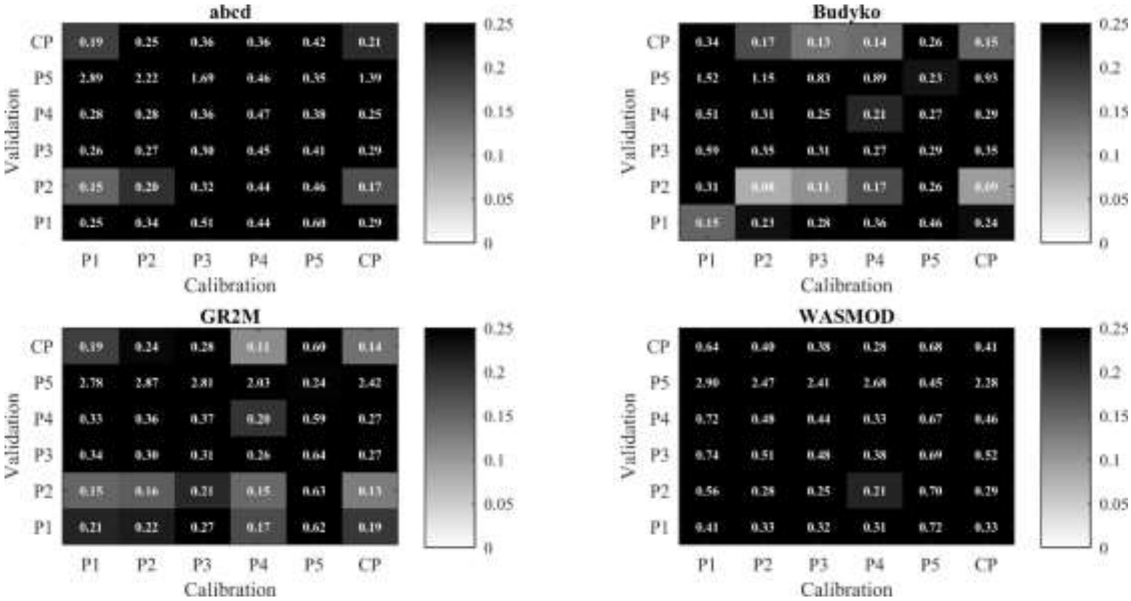

Figure S 11. Errors in intra-annual flow distribution, ε_{IAFD}. Black cells denote simulations with ε_{IAFD} outside the acceptance range ($\varepsilon_{IAFD} > 0.25$).

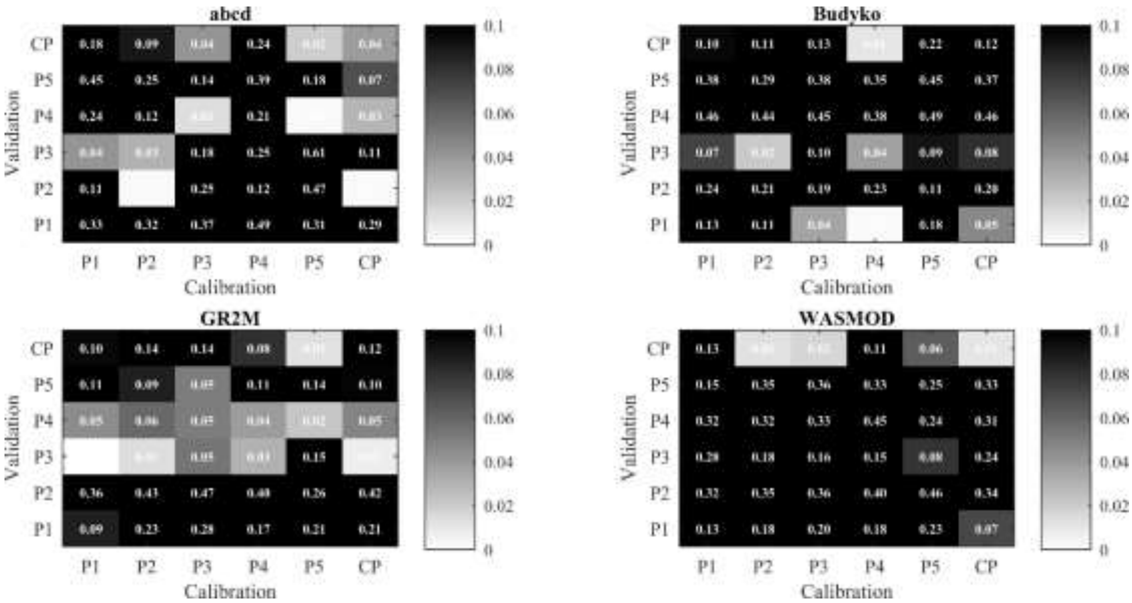

Figure S 12. Error in streamflow elasticity, ε_{SEL}. Black cells denote simulations with ε_{SEL} outside the acceptance range ($\varepsilon_{SEL} > 0.1$).

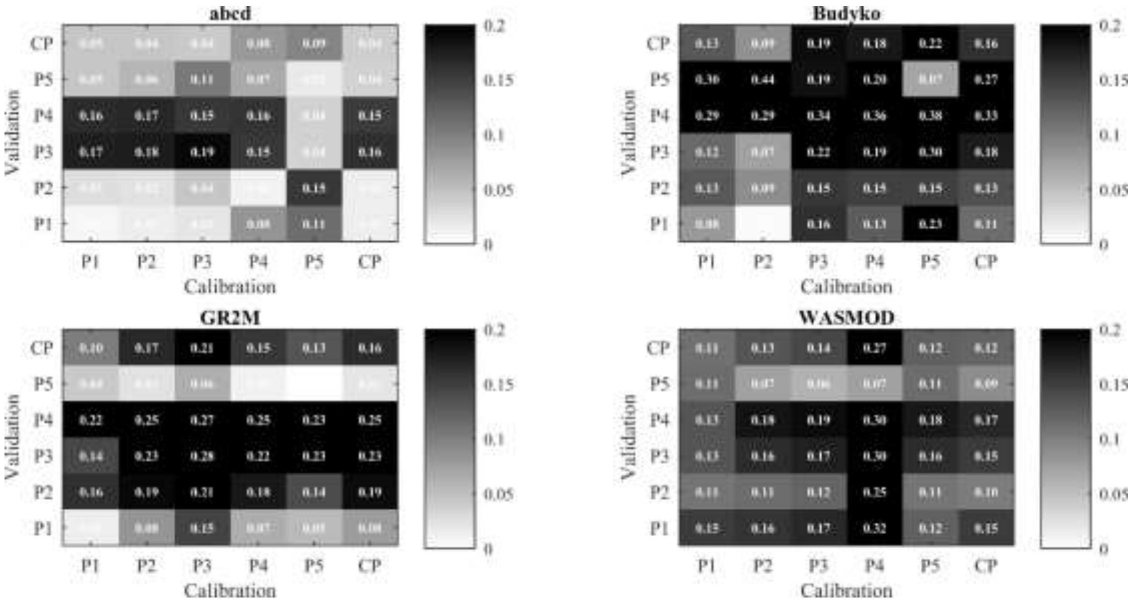

Figure S 13. Errors in lag 1 autocorrelation, ε_{AC1}. Black cells denote simulations with ε_{AC1} outside the acceptance range ($\varepsilon_{AC1} > 0.25$).

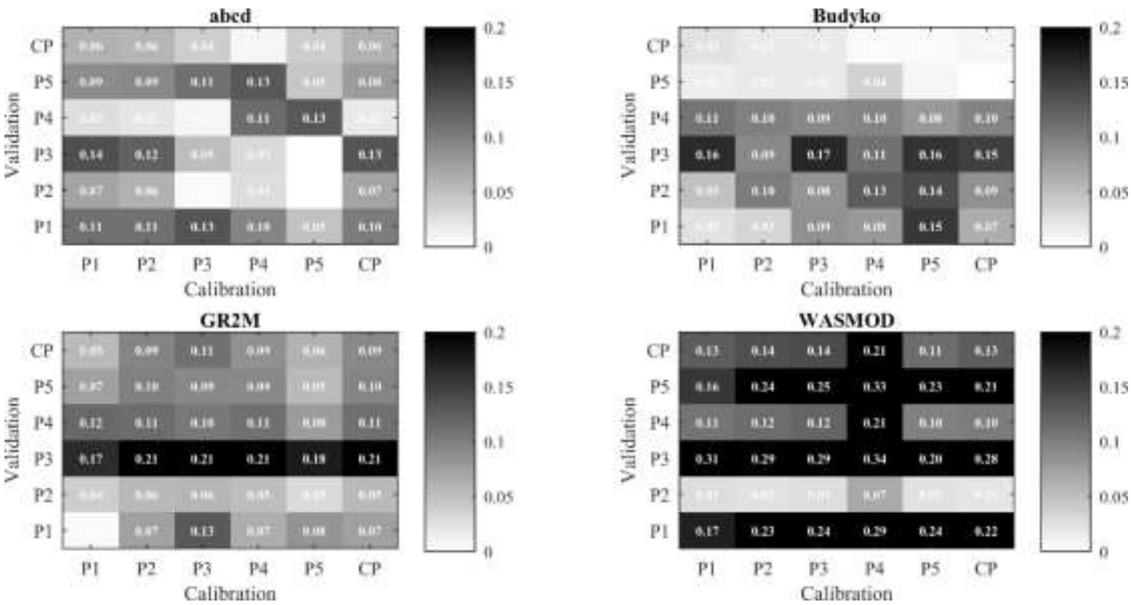

Figure S 14. Errors in lag 12 autocorrelation, ε_{AC12}. Black cells denote simulations with ε_{AC12} outside the acceptance range ($\varepsilon_{AC12} > 0.25$).

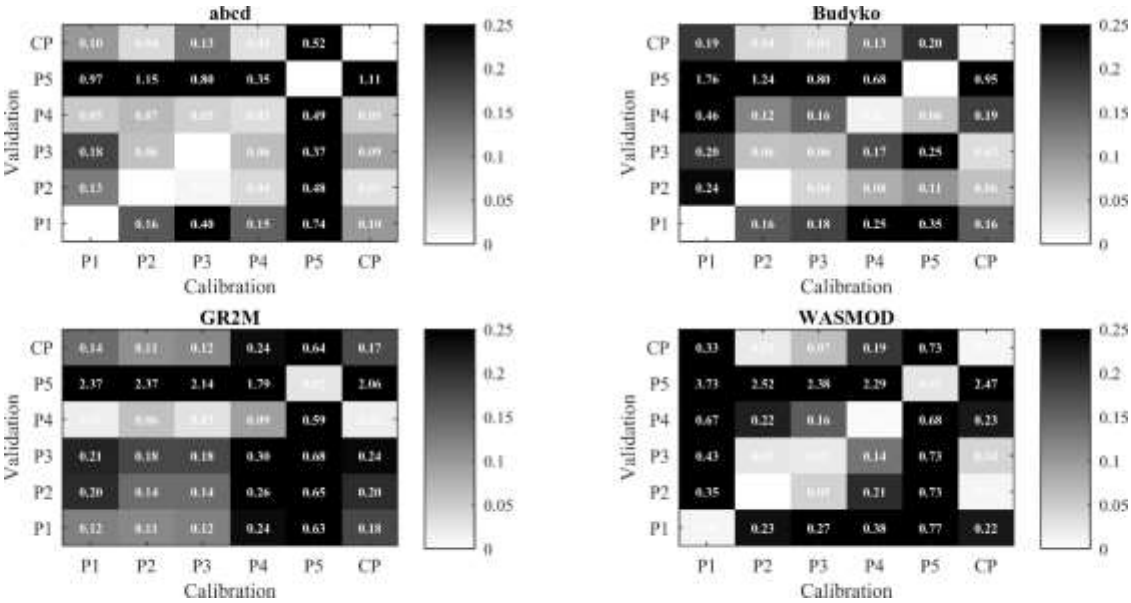

Figure S 15. Errors in standard deviation, ε_σ. Black cells denote simulations with ε_σ outside the acceptance range ($\varepsilon_\sigma > 0.25$).

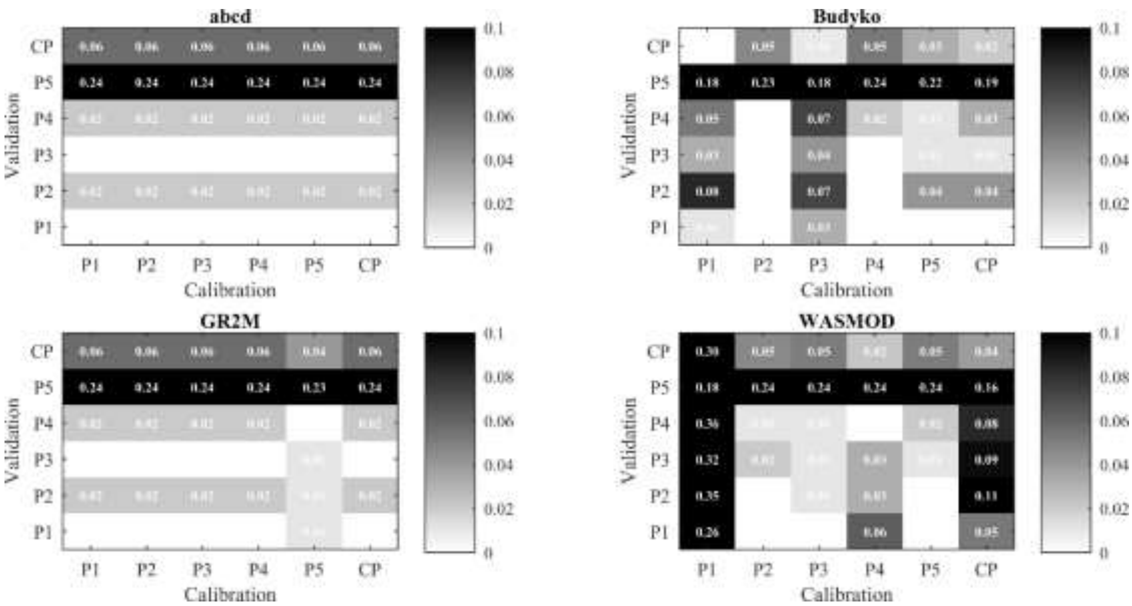

Figure S 16. Errors in percentage of zero flows, ε_{P0}. Black cells denote simulations with ε_{P0} outside the acceptance range ($\varepsilon_{P0} > 0.1$).

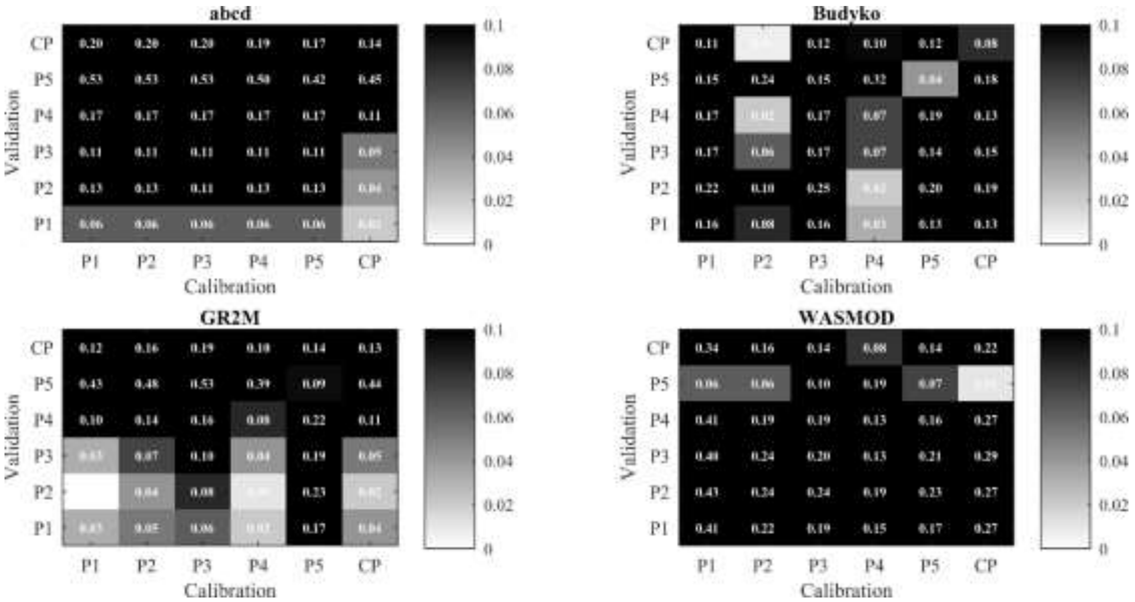

Figure S 17. Errors in duration of 20th runoff percentile, ε_{DQ20}. Black cells denote simulations with ε_{DQ20} outside the acceptance range ($\varepsilon_{DQ20} > 0.1$).

C.3 Limits of model transferability

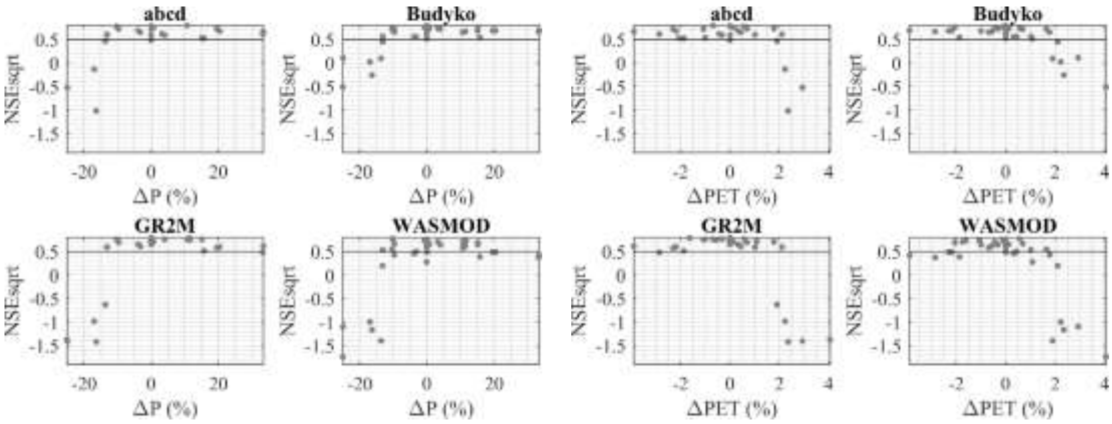

Figure S 18. NSE_{sqrt} vs. change in climate indices

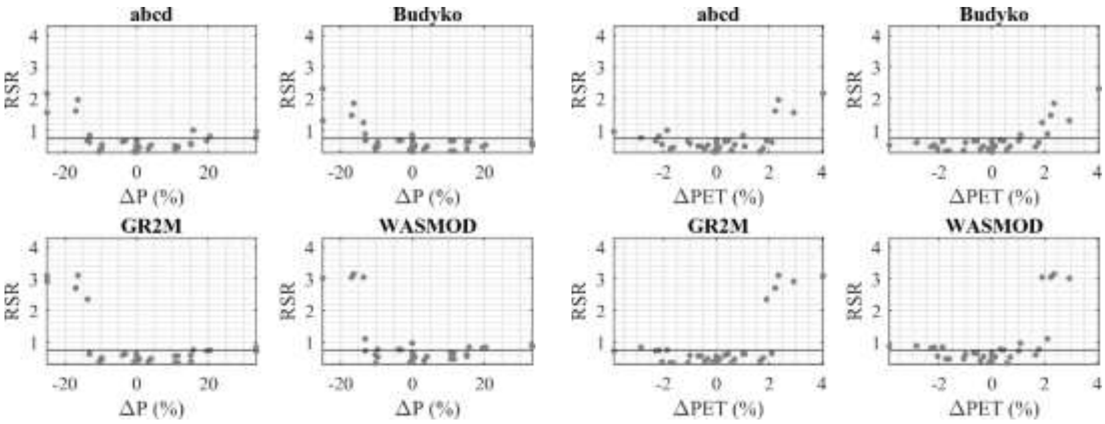

Figure S 19. RSR vs. change in climate indices

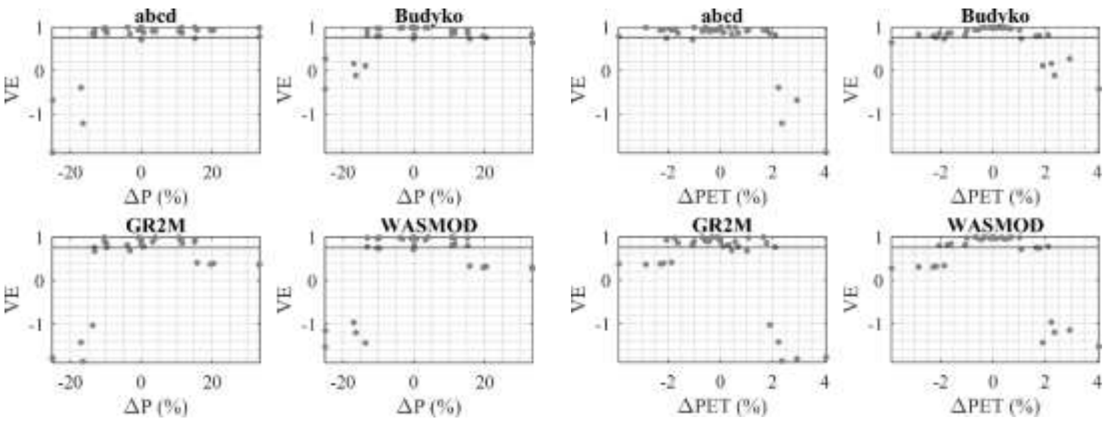

Figure S 20. VE vs. change in climate indices

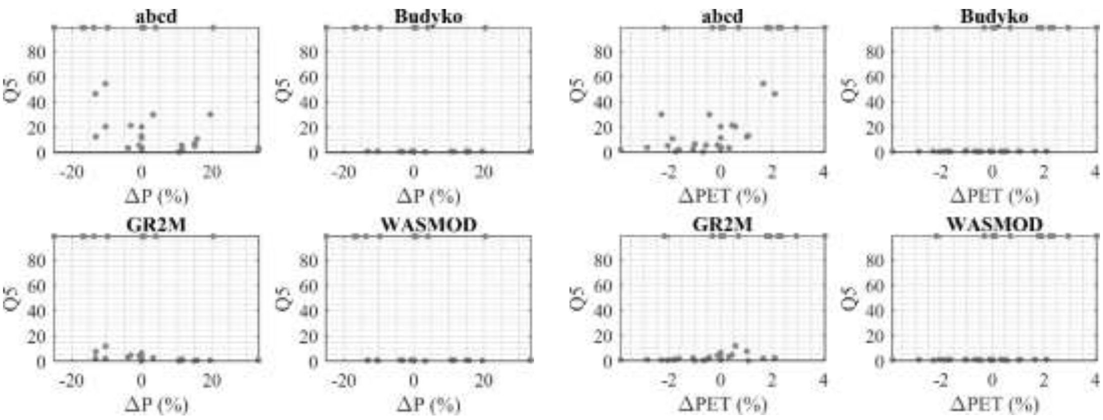

Figure S 21. ε_{Q5} vs. change in climate indices

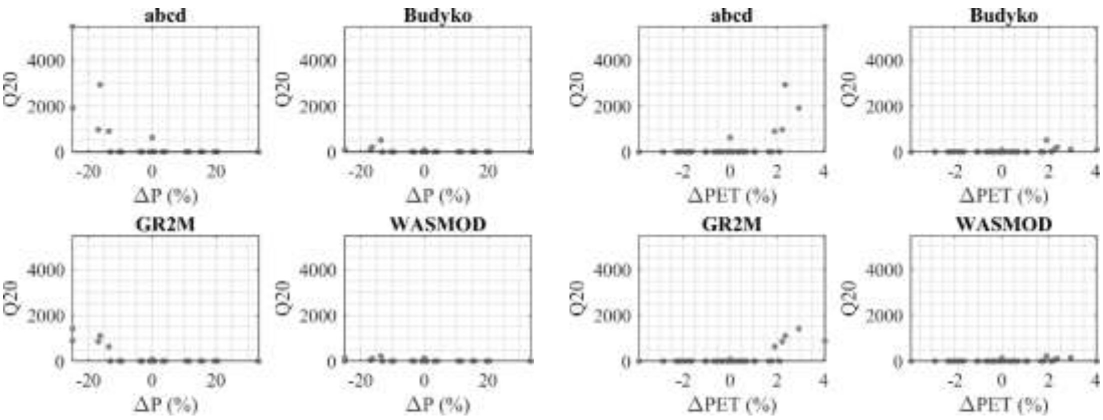

Figure S 22. ε_{Q20} vs. change in climate indices

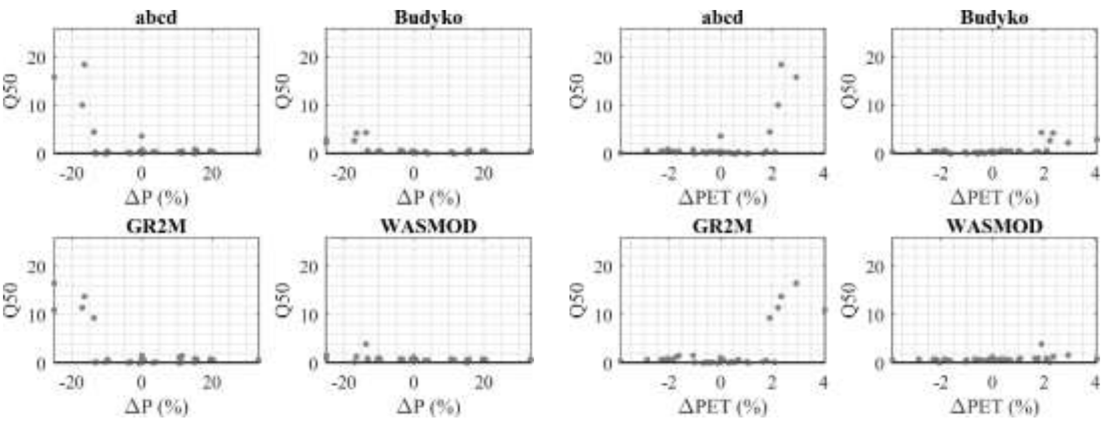

Figure S 23. εQ50 vs. change in climate indices

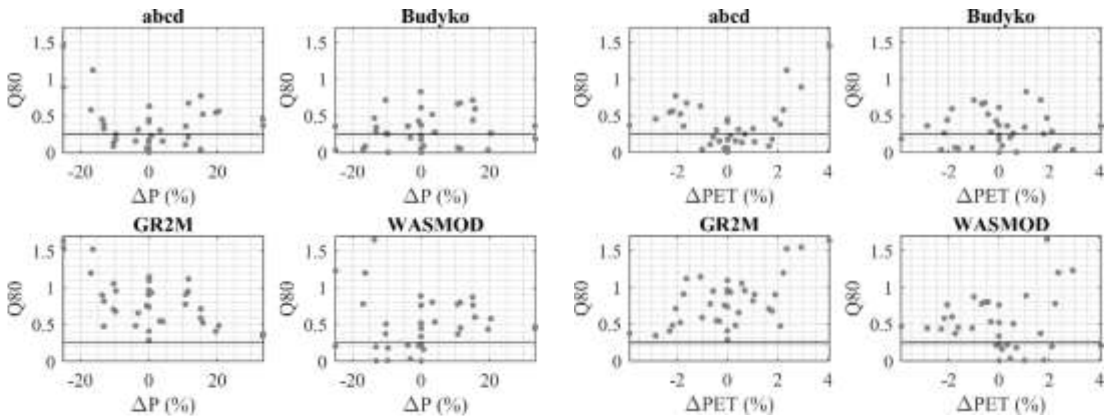

Figure S 24. ε_{Q80} vs. change in climate indices

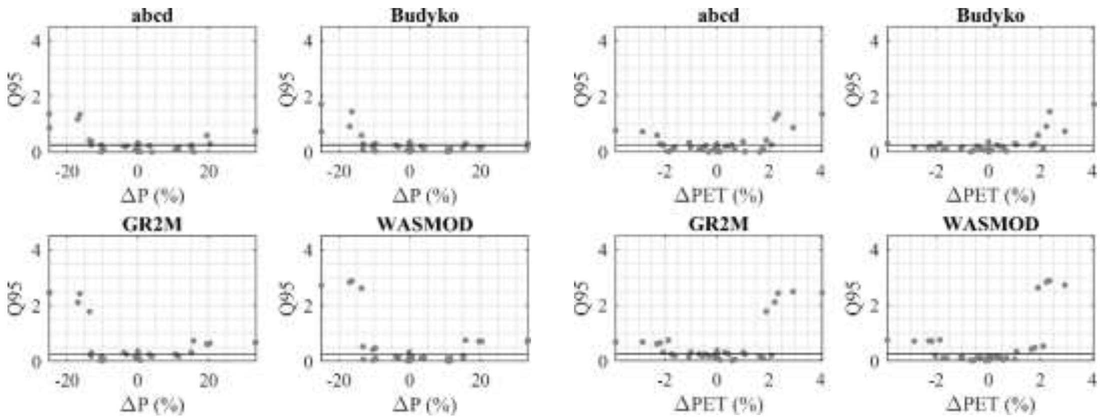

Figure S 25. ε_{Q95} vs. change in climate indices

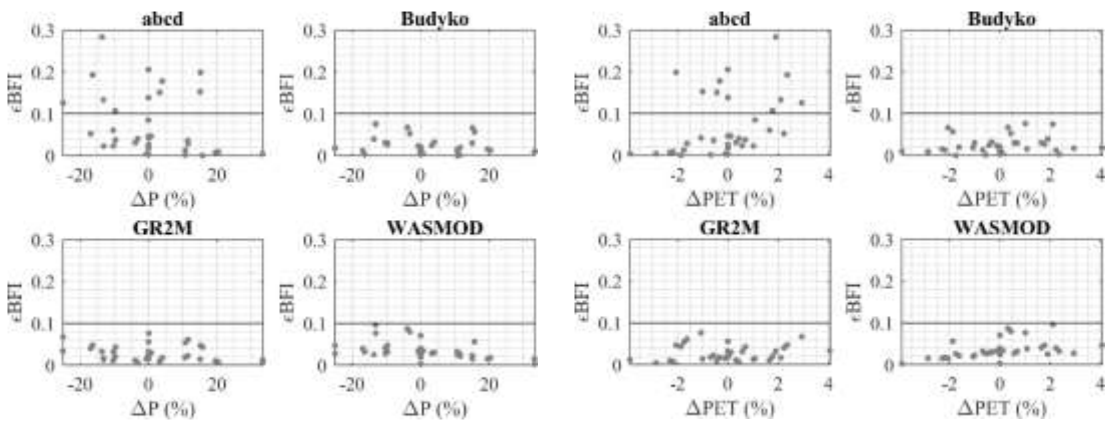

Figure S 26. ε_{BFI} vs. change in climate indices

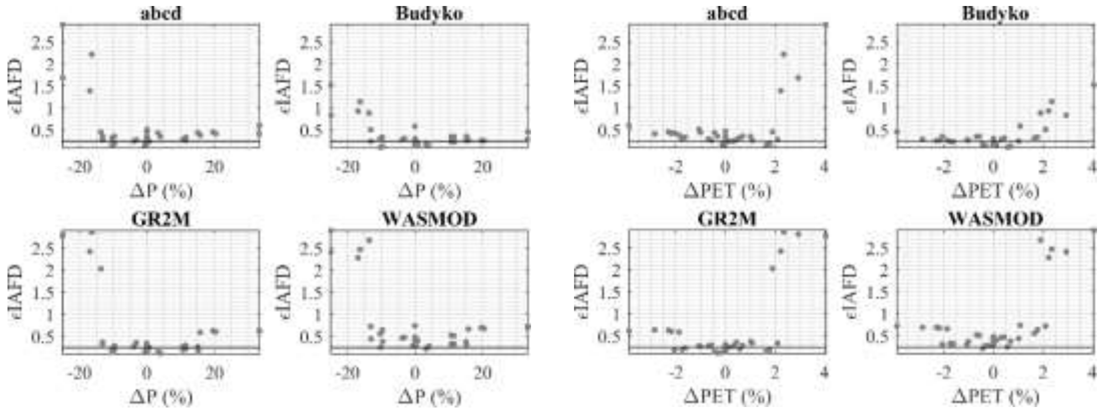

Figure S 27. ε_{IAFD} vs. change in climate indices

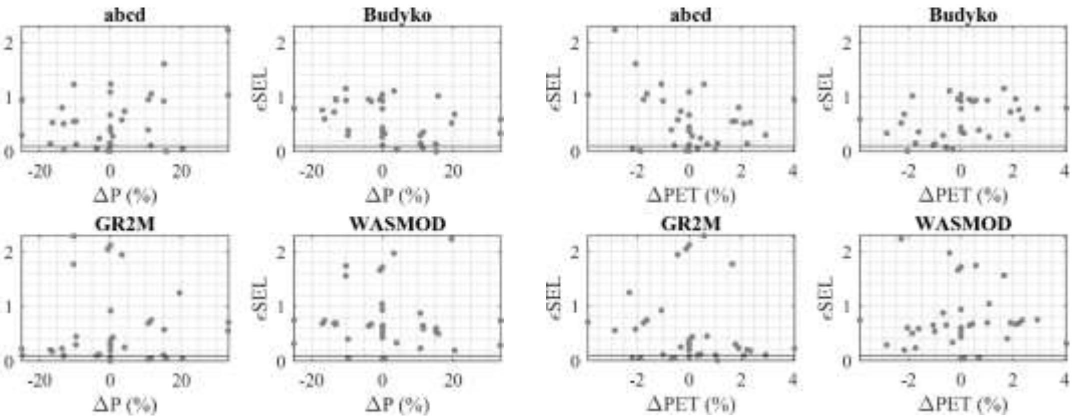

Figure S 28. ε_{SEL} vs. change in climate indices

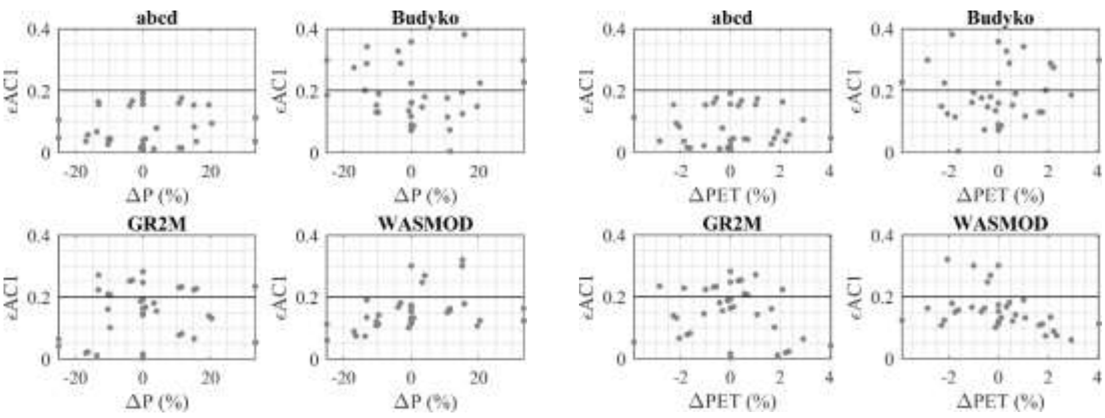

Figure S 29. ε_{AC1} vs. change in climate indices

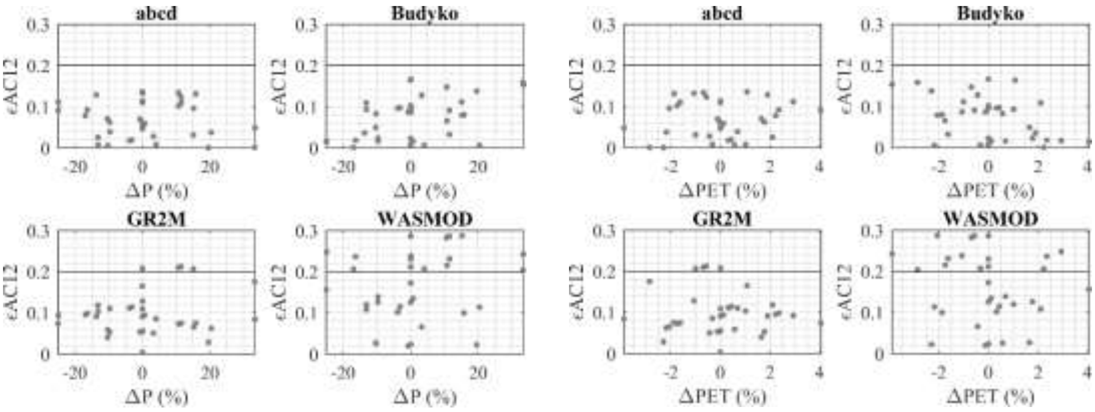

Figure S 30. ε_{AC12} vs. change in climate indices

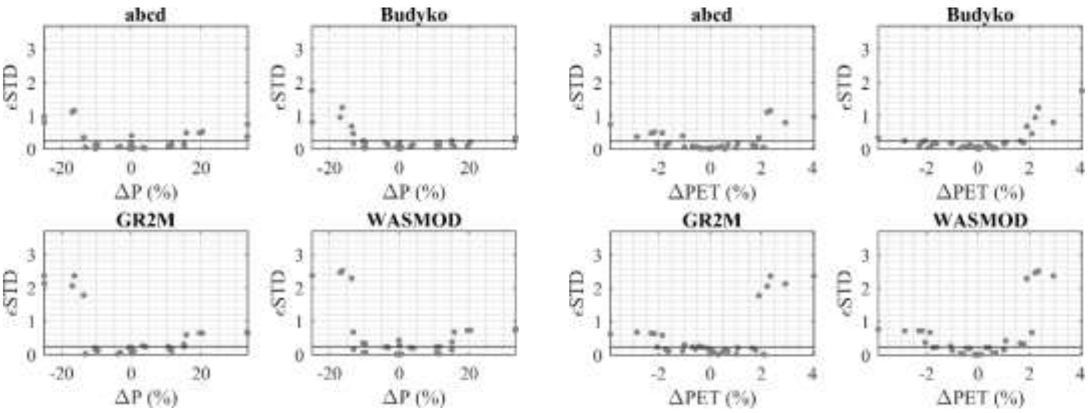

Figure S 31. ε_{σ} vs. change in climate indices

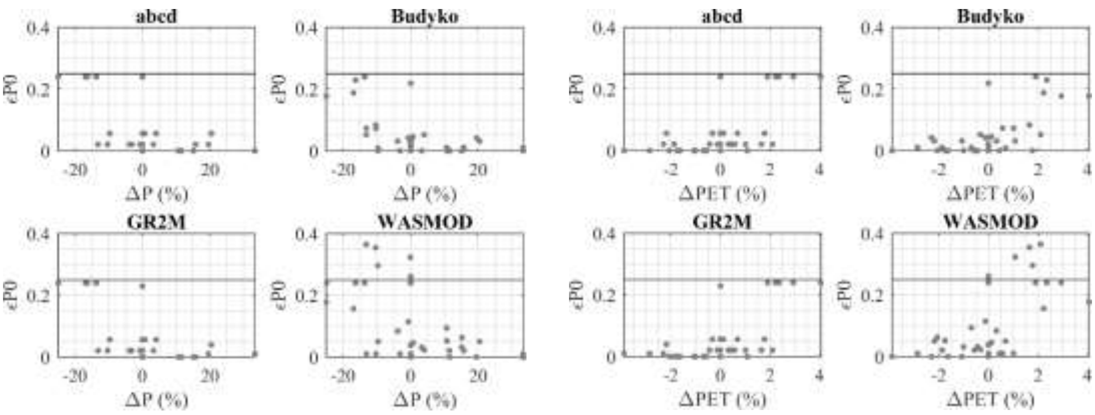

Figure S 32. ε_{P0} vs. change in climate indices

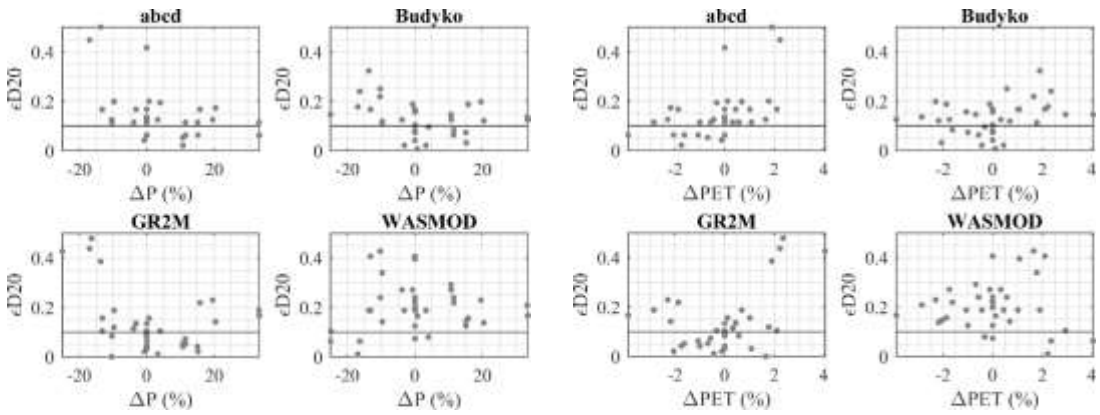

Figure S 33. ε_{D20} vs. change in climate indices

C.4 Water balance components

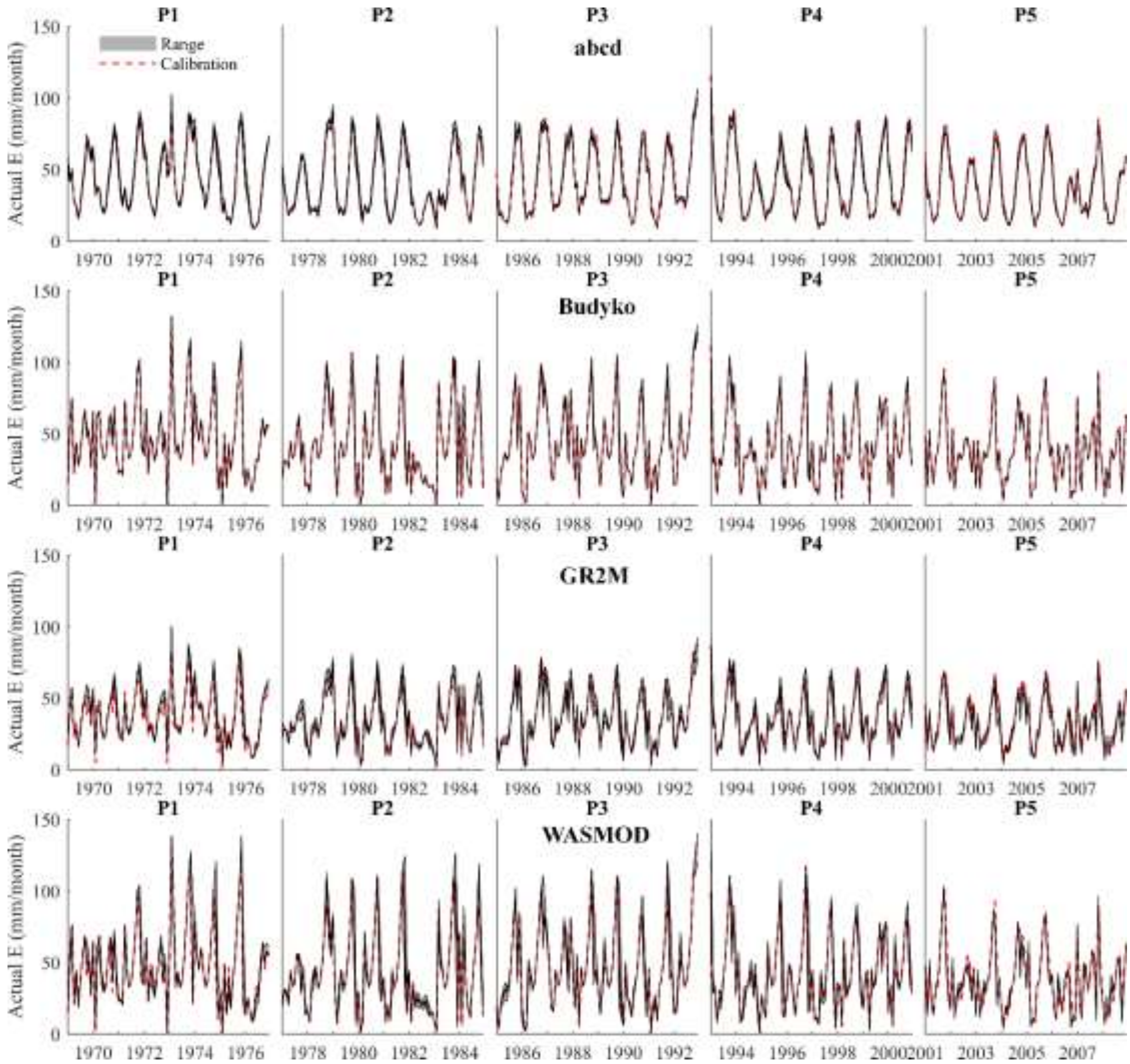

Figure S 34. Simulated actual evapotranspiration *E* with parameter sets from the six calibration periods.

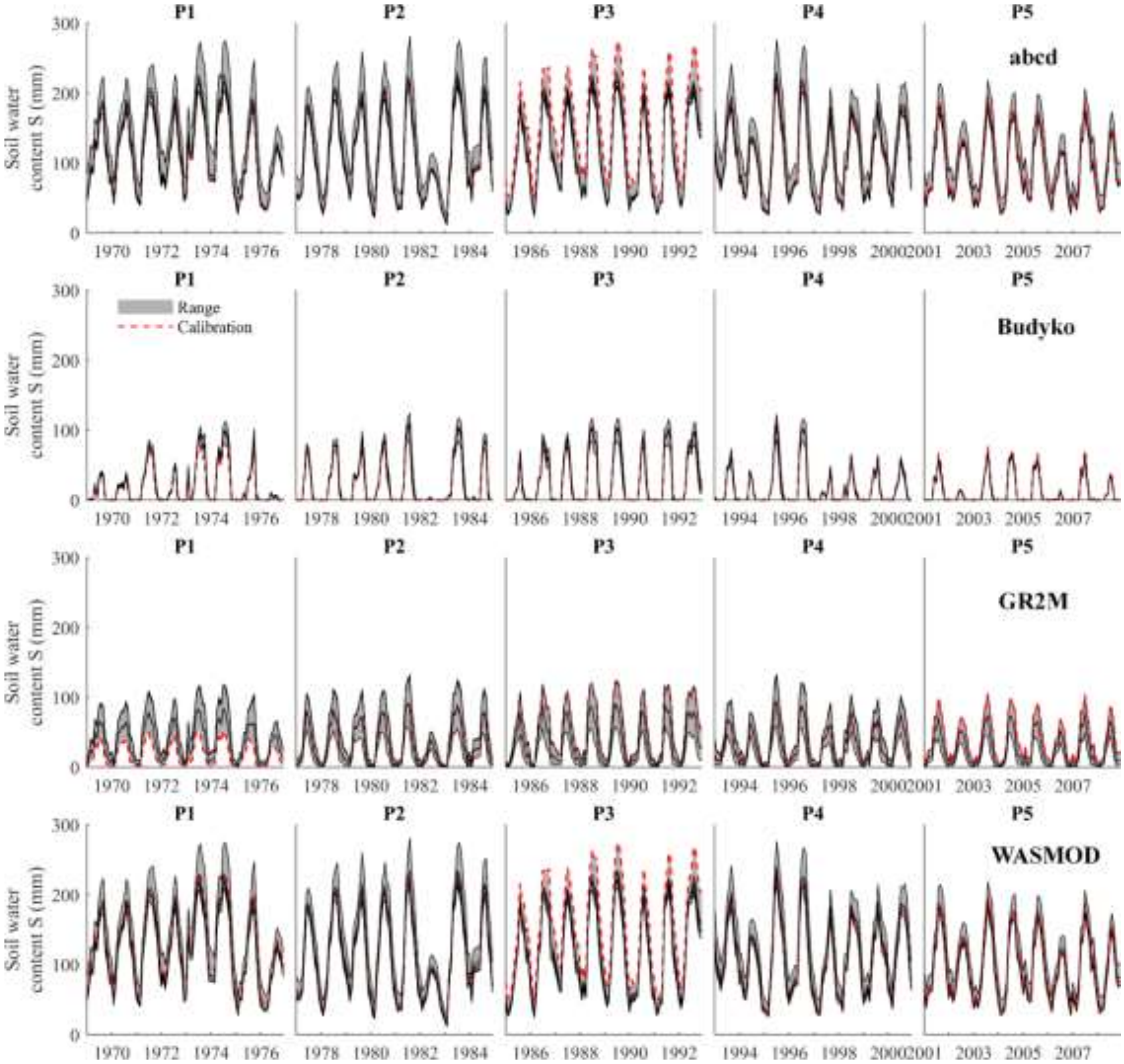

Figure S 35. Simulated soil water storage *S* with parameter sets from the six calibration periods.

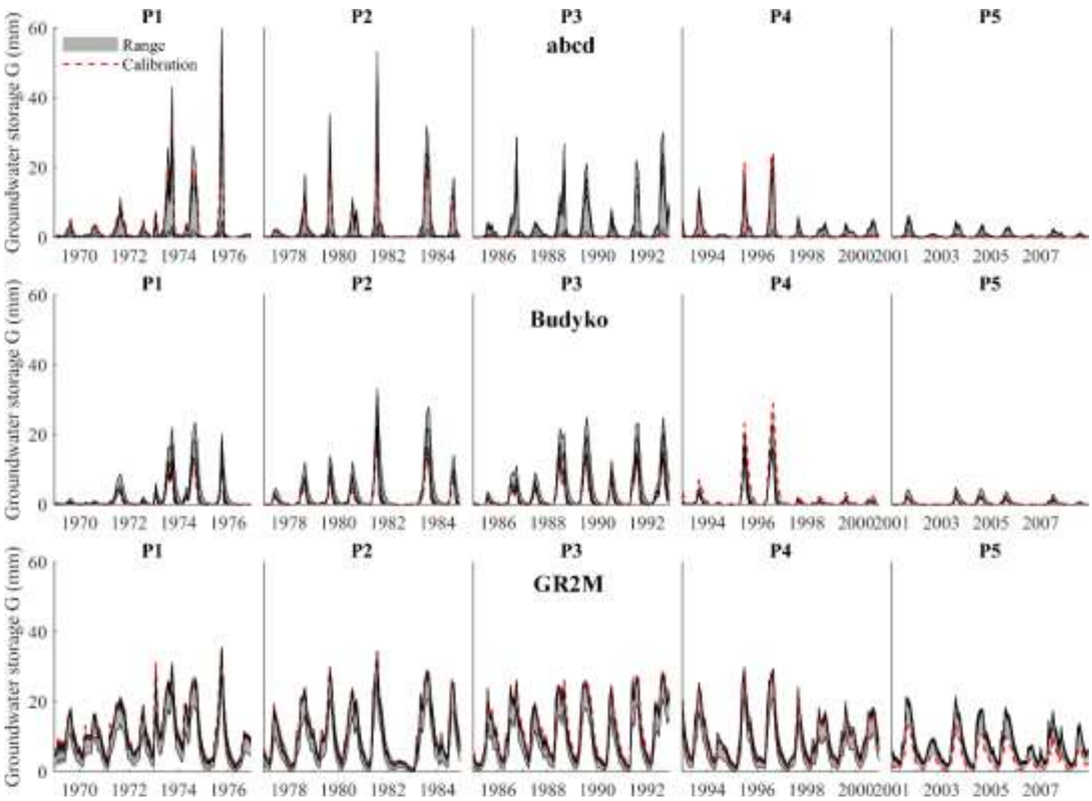

Figure S 36. Simulated groundwater storage *G* with parameter sets from the six calibration periods.

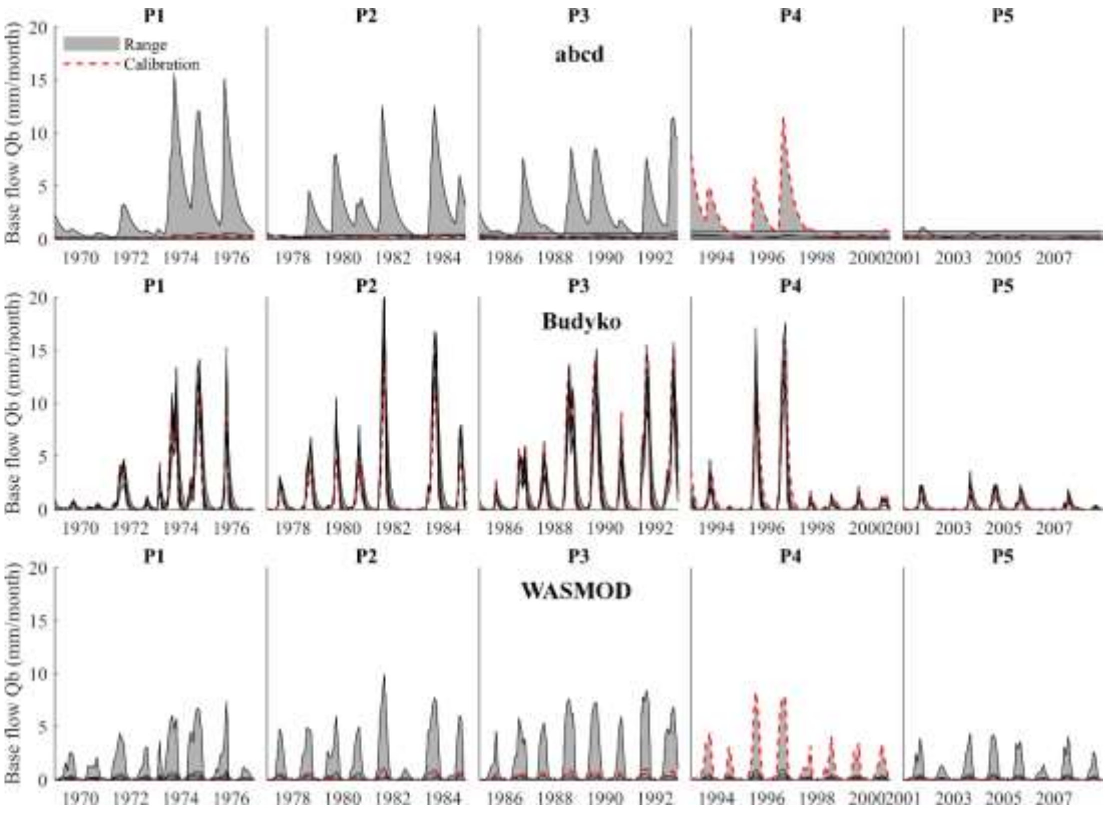

Figure S 37. Simulated baseflow Q_b with parameter sets from the six calibration periods.

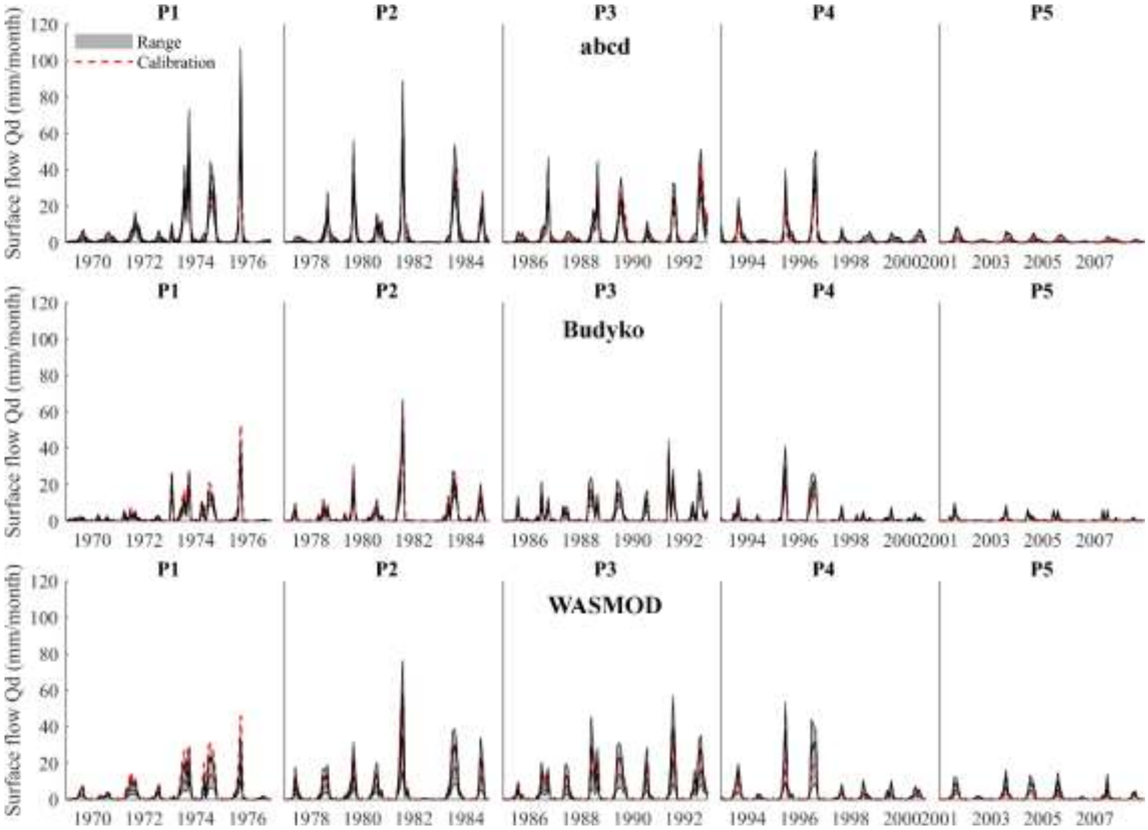

Figure S 38. Simulated direct/surface flow Q_d with parameter sets from the six calibration periods.

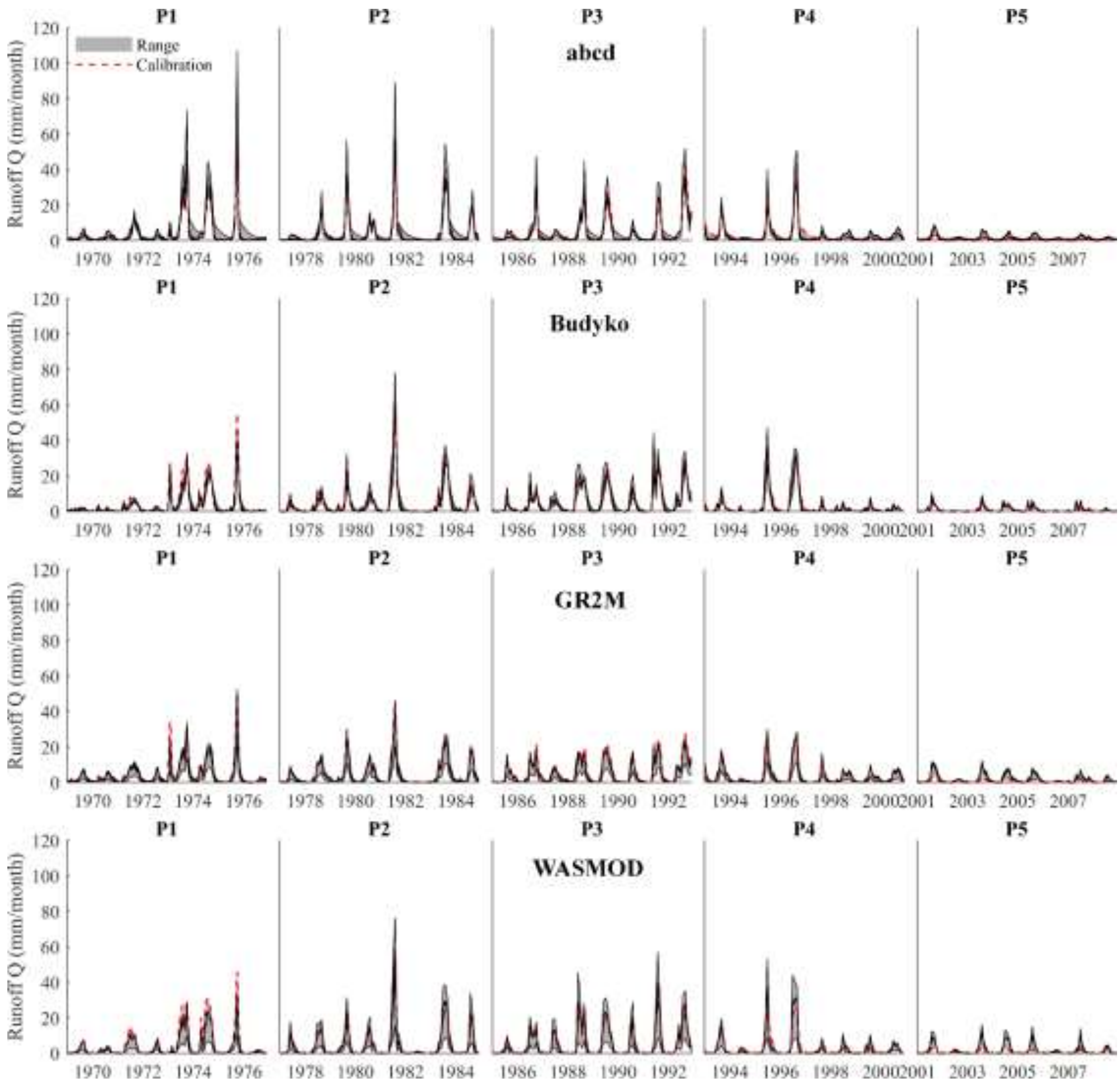

Figure S 39. Simulated total runoff *Q* with parameter sets from the six calibration periods.

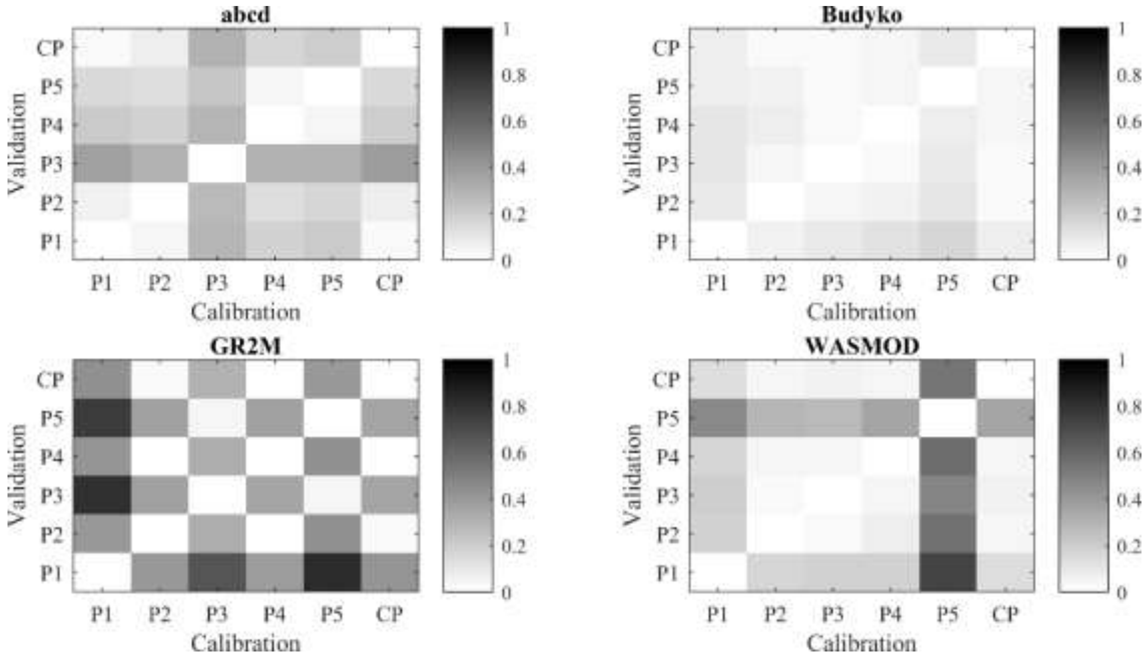

Figure S 40. Relative mean absolute deviation (RMAD) of simulated actual evapotranspiration *E*. Black cells denote unacceptably high RMAD values (> 1).

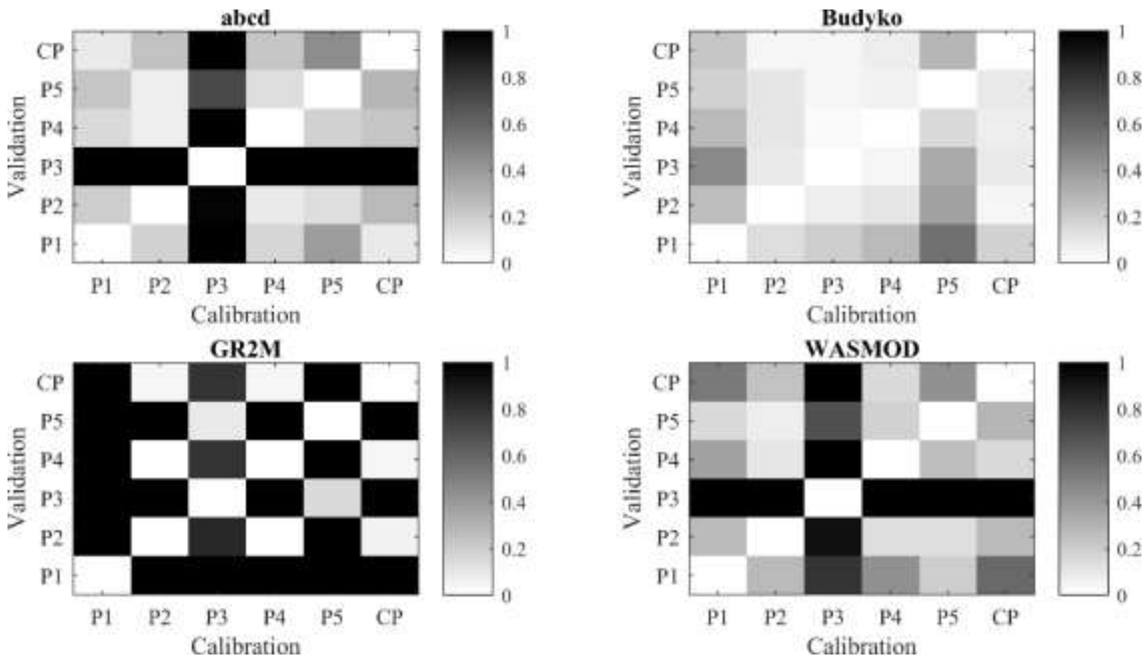

Figure S 41. Relative mean absolute deviation (RMAD) of simulated soil water content *S*. Black cells denote unacceptably high RMAD values (> 1).

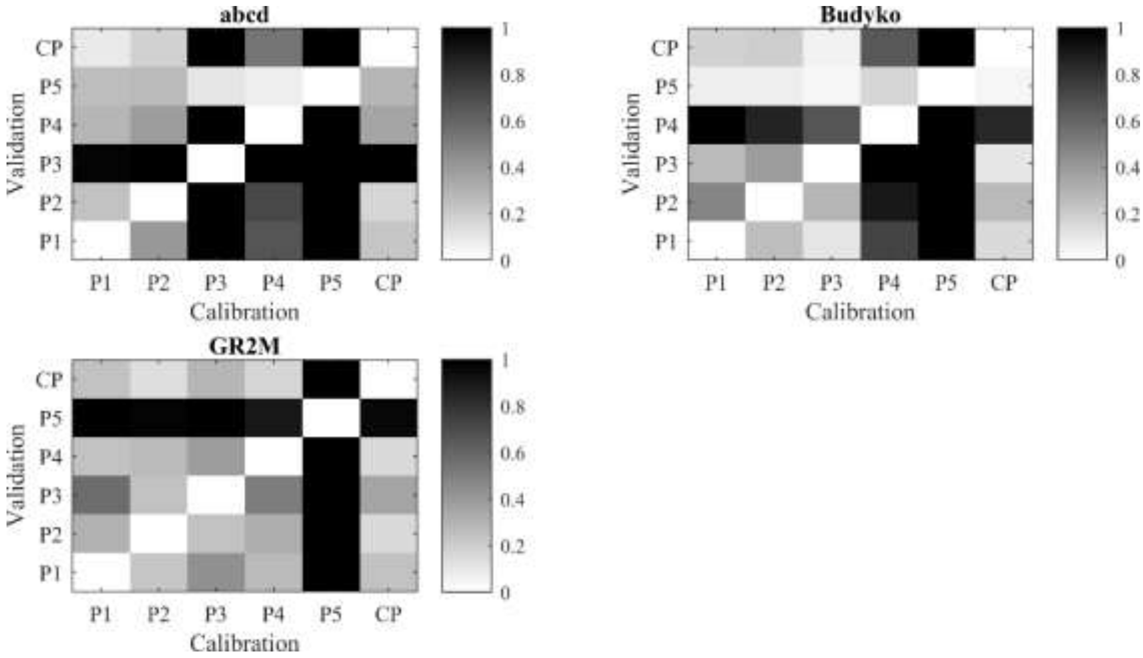

Figure S 42. Relative mean absolute deviation (RMAD) of simulated groundwater storage *G*. Black cells denote unacceptably high RMAD values (> 1).

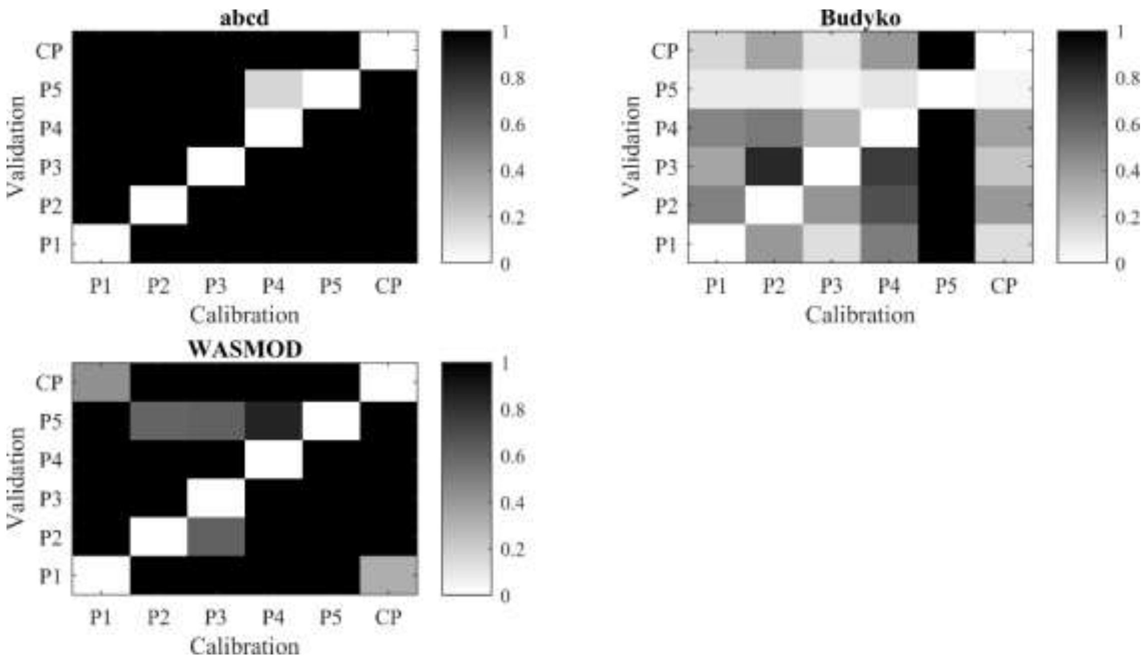

Figure S 43. Relative mean absolute deviation (RMAD) of simulated baseflow Q_b. Black cells denote unacceptably high RMAD values (> 1).

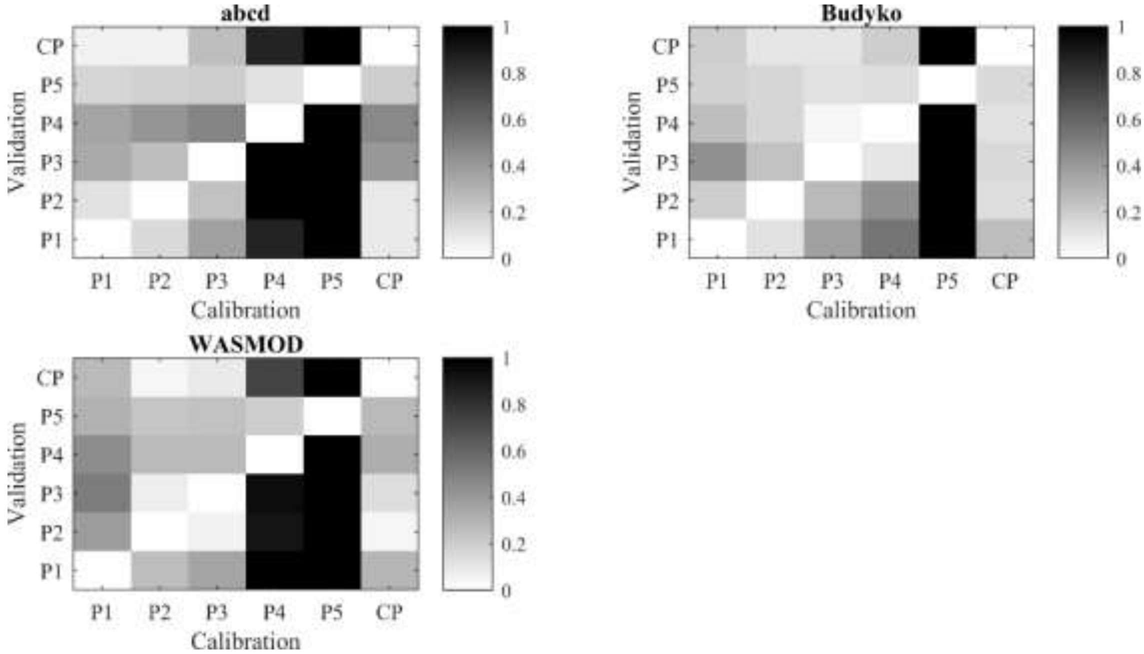

Figure S 44. Relative mean absolute deviation (RMAD) of simulated direct/surface runoff Q_d. Black cells denote unacceptably high RMAD values (> 1).

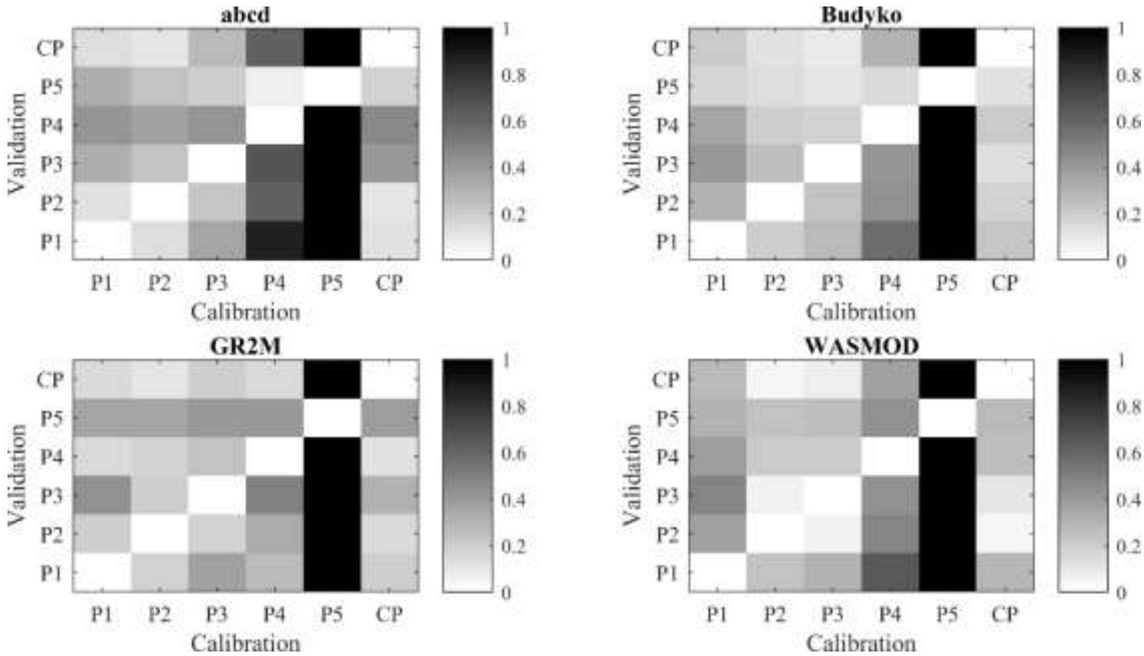

Figure S 45. Relative mean absolute deviation (RMAD) of simulated total runoff Q. Black cells denote unacceptably high RMAD values (> 1).

C.5 Parameter correlations to climate indices

Table S 7. Spearman rank correlation coefficients between the model parameters and the selected hydroclimatic indices.

Parameters	**P**	**PET**	**T_{avg}**	**Q_{avg}**	**AR**	**V0/P**
abcd						
a	0.714	-0.771	-0.200	0.543	-0.714	0.543
b	-0.086	0.314	-0.257	-0.600	0.086	-0.600
c	-0.029	-0.029	0.600	0.371	0.029	0.371
d	0.486	-0.429	0.143	0.429	-0.486	0.429
Budyko						
a	0.200	-0.257	0.143	0.600	-0.200	0.600
b	-0.714	0.771	0.200	-0.543	0.714	-0.543
Smax	0.829	-0.771	-0.486	0.486	-0.829	0.486
d	-0.771	0.657	0.257	-0.543	0.771	-0.543
GR2M						
X1	0.486	-0.600	-0.600	0.314	-0.486	0.314
X2	-0.371	0.429	0.029	-0.829	0.371	-0.829
WASMOD						
a1	-0.600	0.486	0.714	-0.086	0.600	-0.086
a2	0.377	-0.232	0.058	-0.116	-0.377	-0.116
a3	-0.829	0.771	0.486	-0.486	0.829	-0.486

C.6 Hydrographs

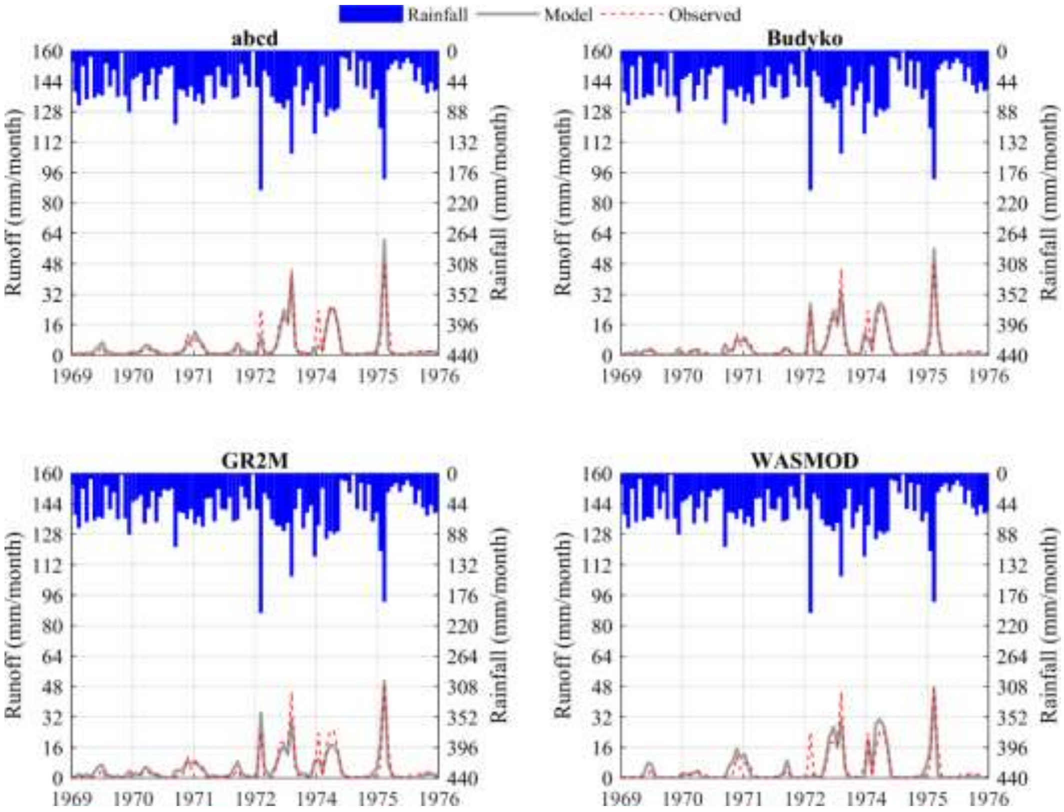

Figure S 46. Hydrographs obtained in the calibration in the P1 period.

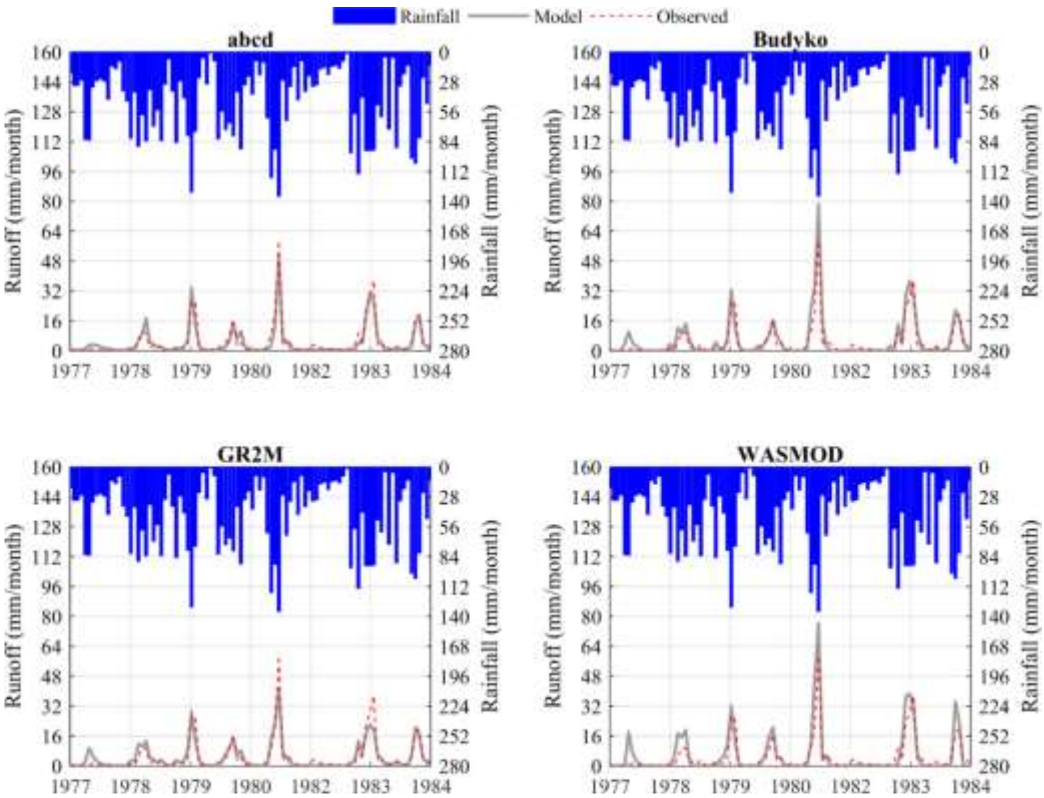

Figure S 47. Hydrographs simulated in the P2 period with the P1 parameter set.

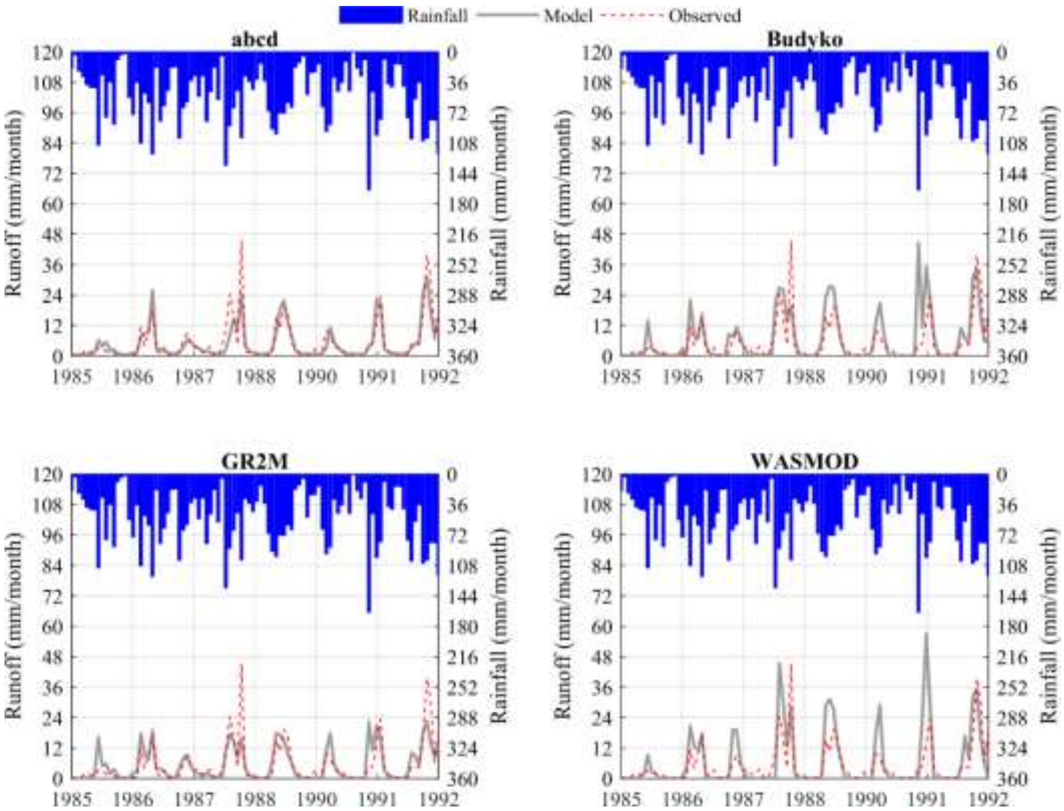

Figure S 48. Hydrographs simulated in the P3 period with the P1 parameter set.

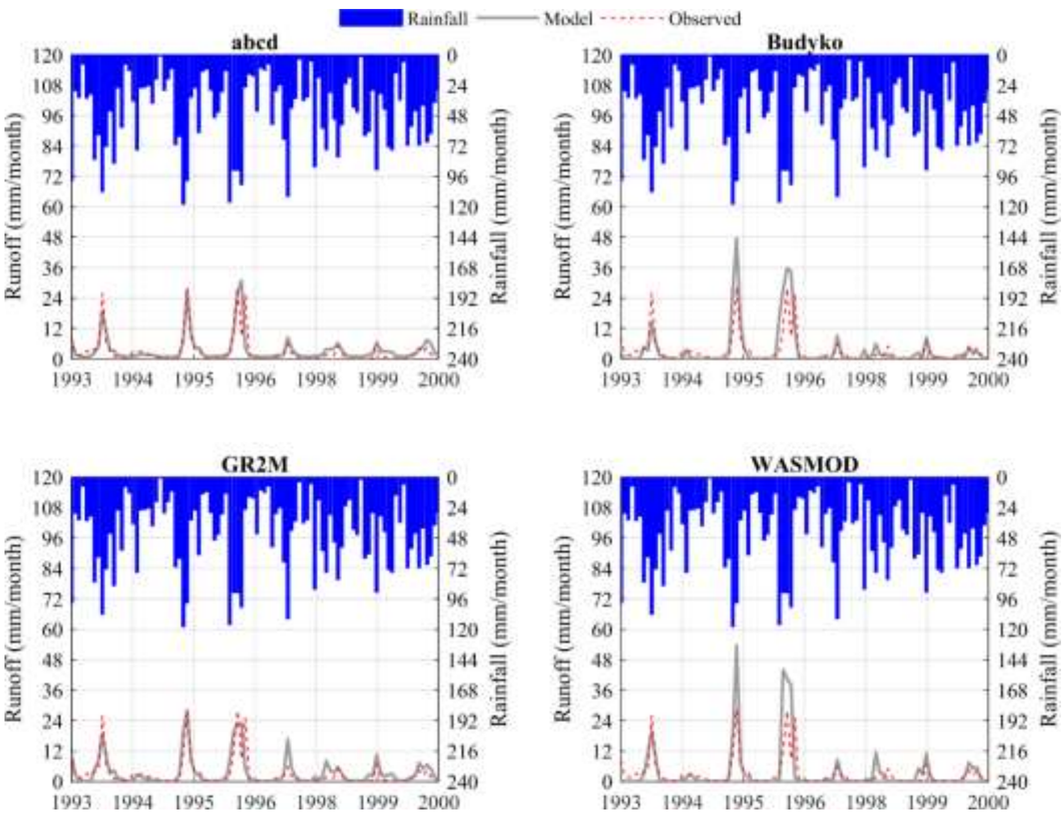

Figure S 49. Hydrographs simulated in the P4 period with the P1 parameter set.

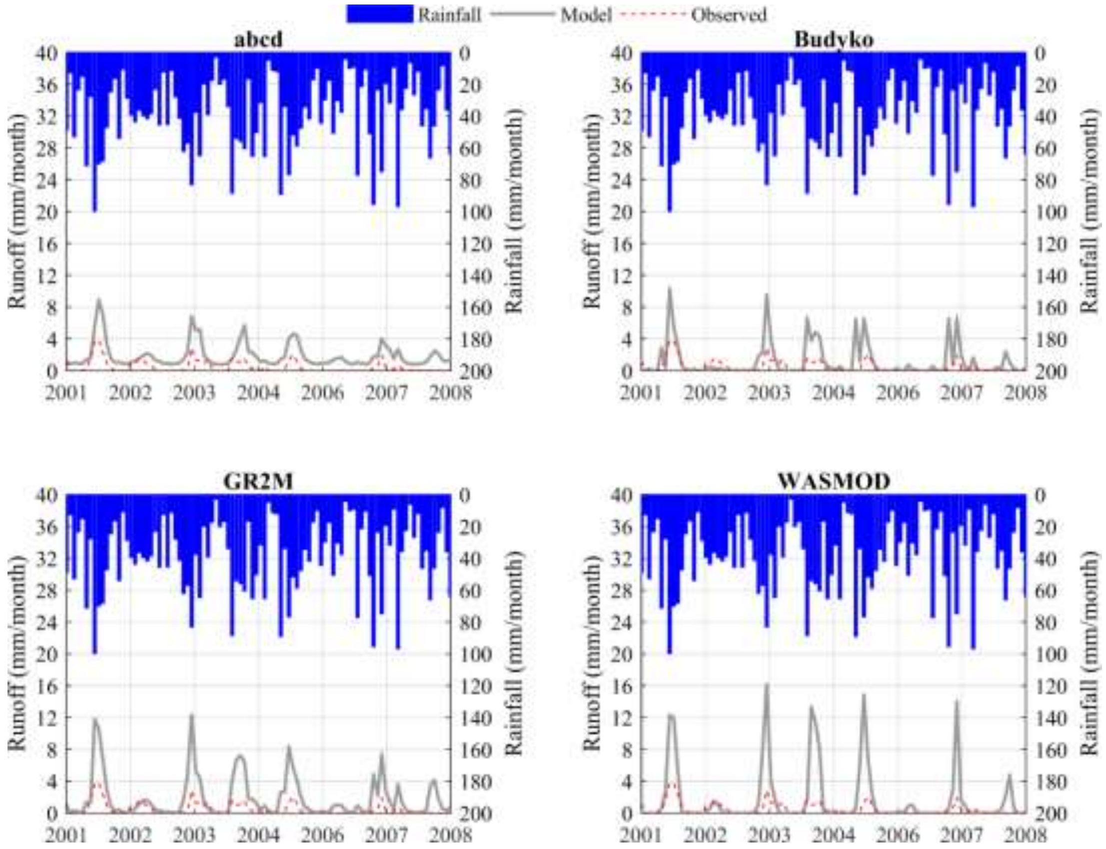

Figure S 50. Hydrographs simulated in the P5 period with the P1 parameter set.

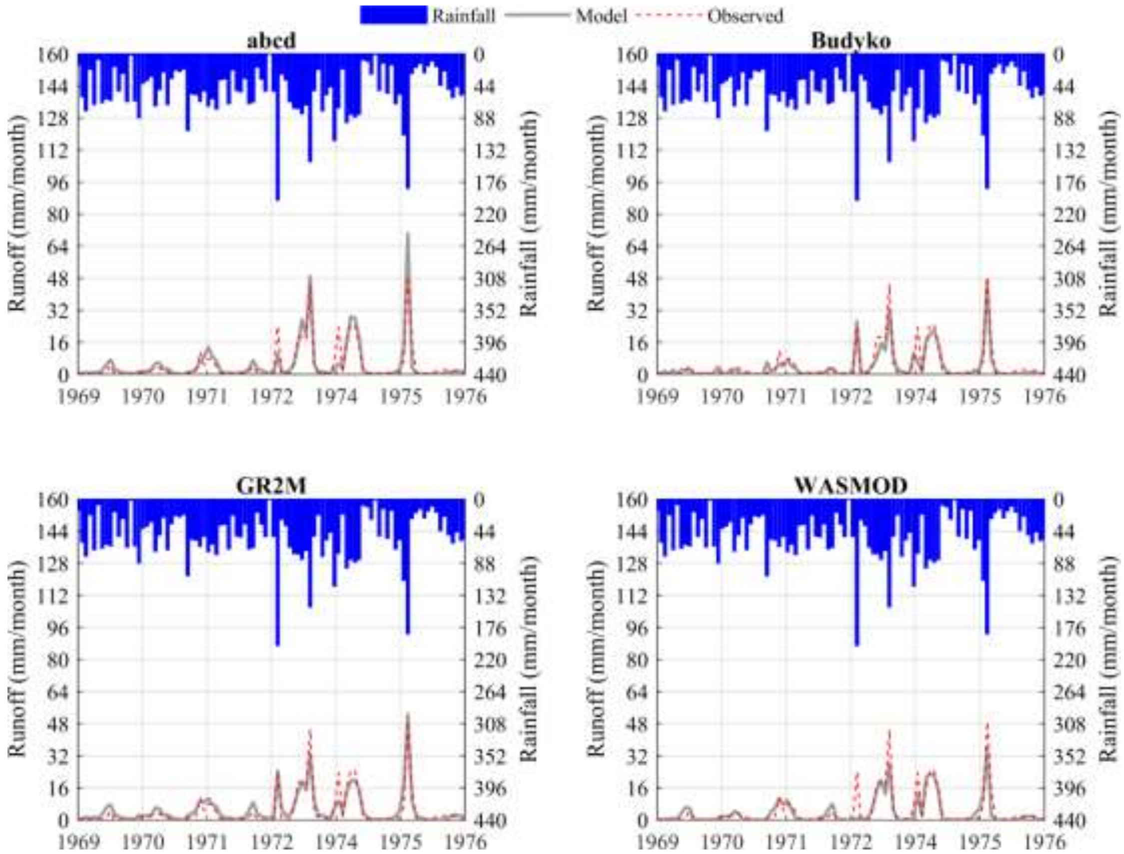

Figure S 51. Hydrographs simulated in the P1 period with the P2 parameter set.

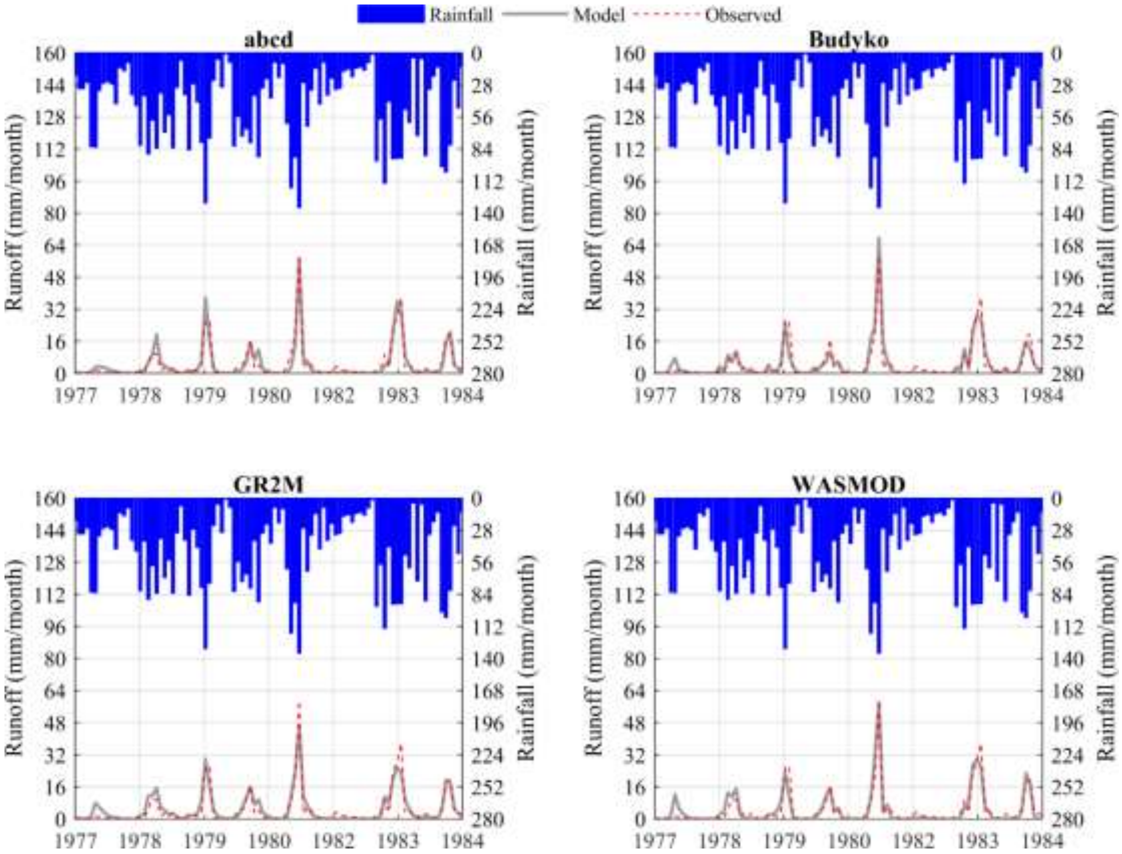

Figure S 52. Hydrographs obtained in the calibration in the P2 period.

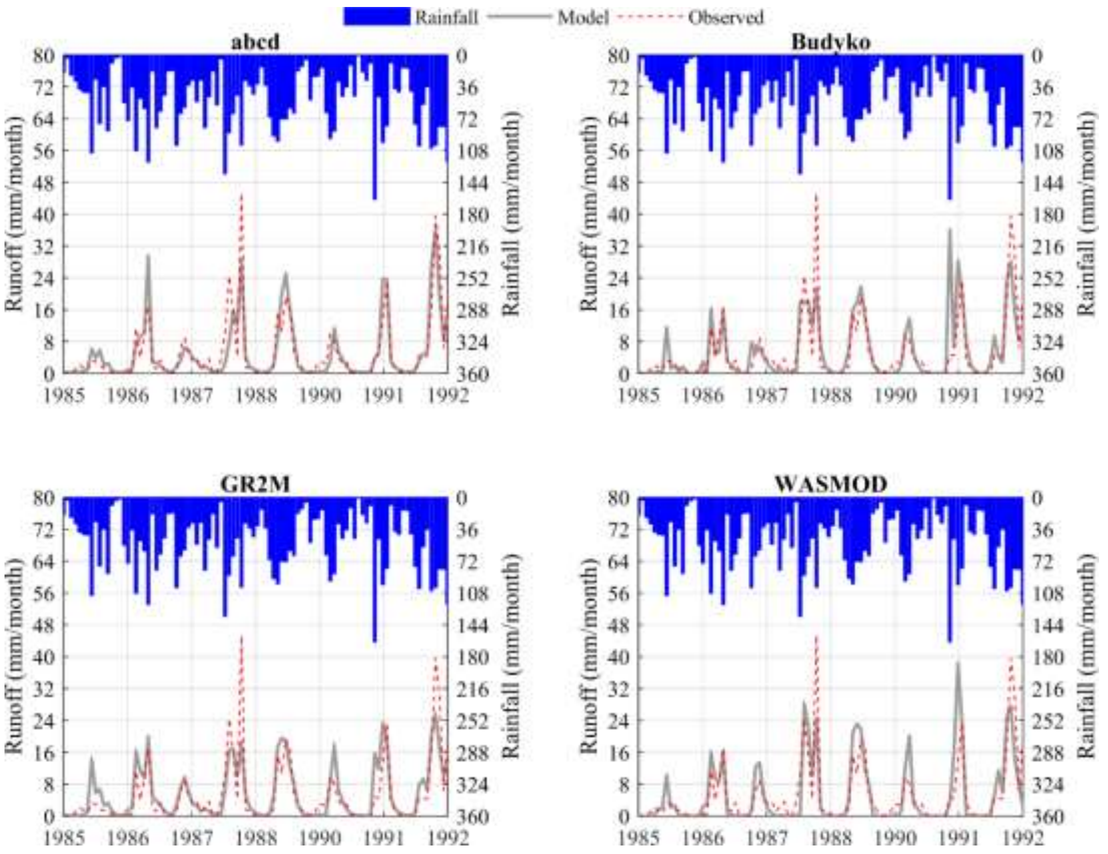

Figure S 53. Hydrographs simulated in the P3 period with the P2 parameter set.

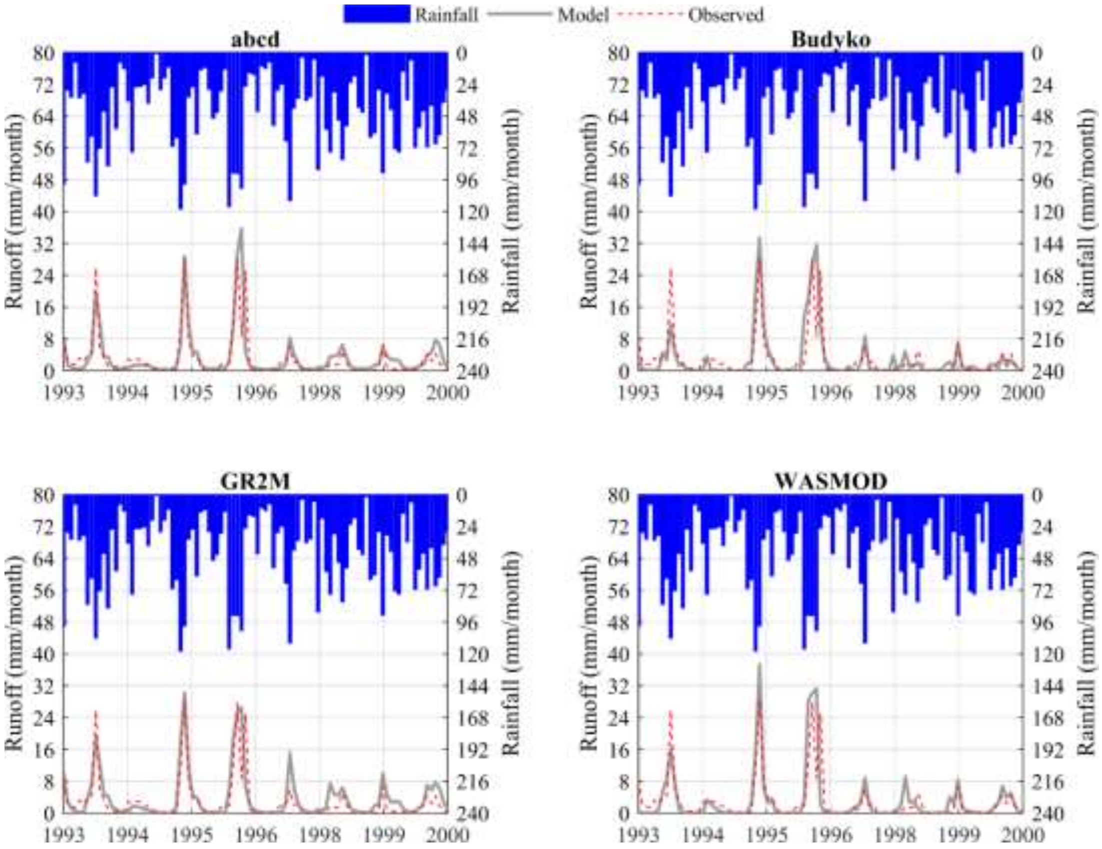

Figure S 54. Hydrographs simulated in the P4 period with the P2 parameter set.

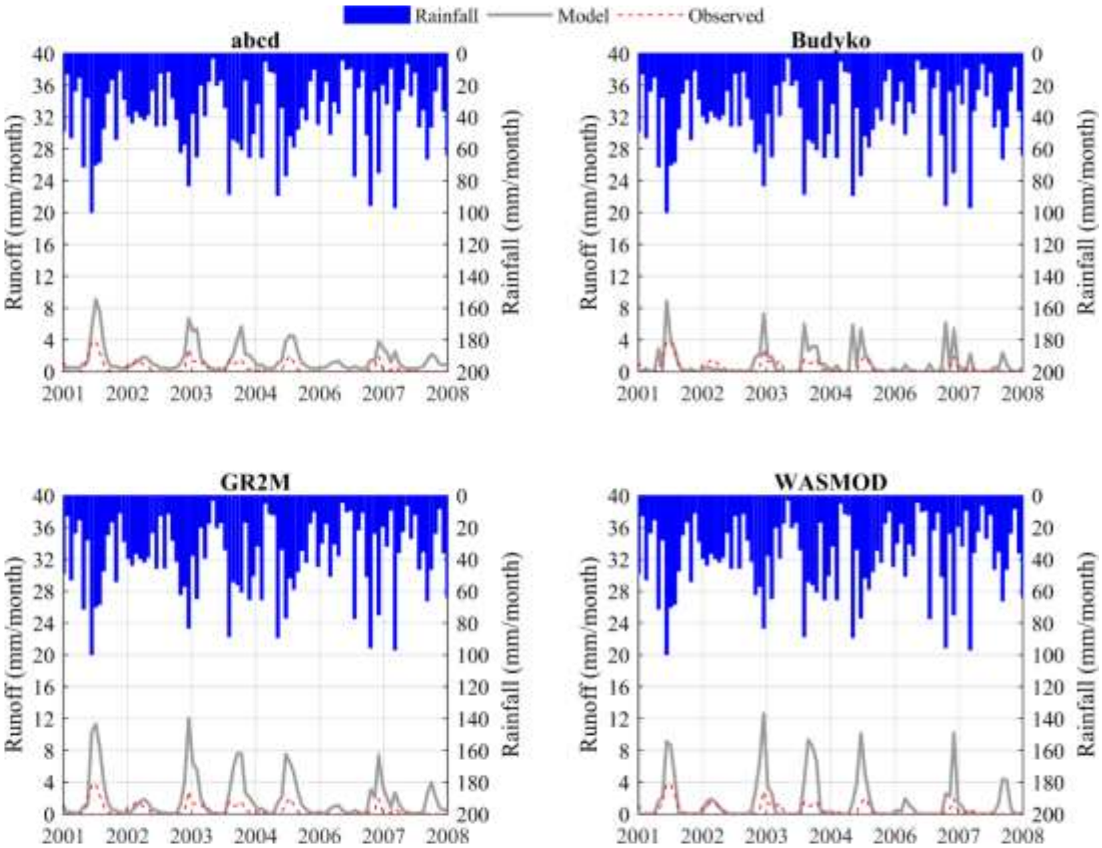

Figure S 55. Hydrographs simulated in the P5 period with the P2 parameter set.

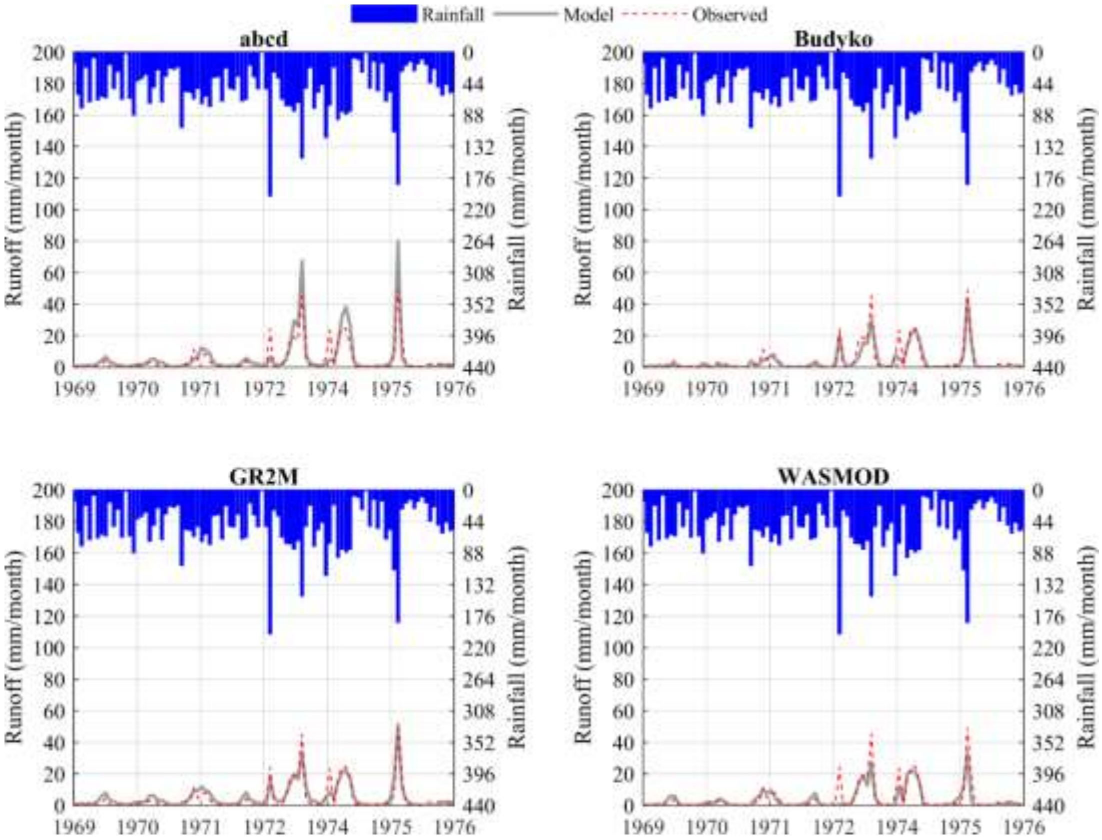

Figure S 56. Hydrographs simulated in the P1 period with the P3 parameter set.

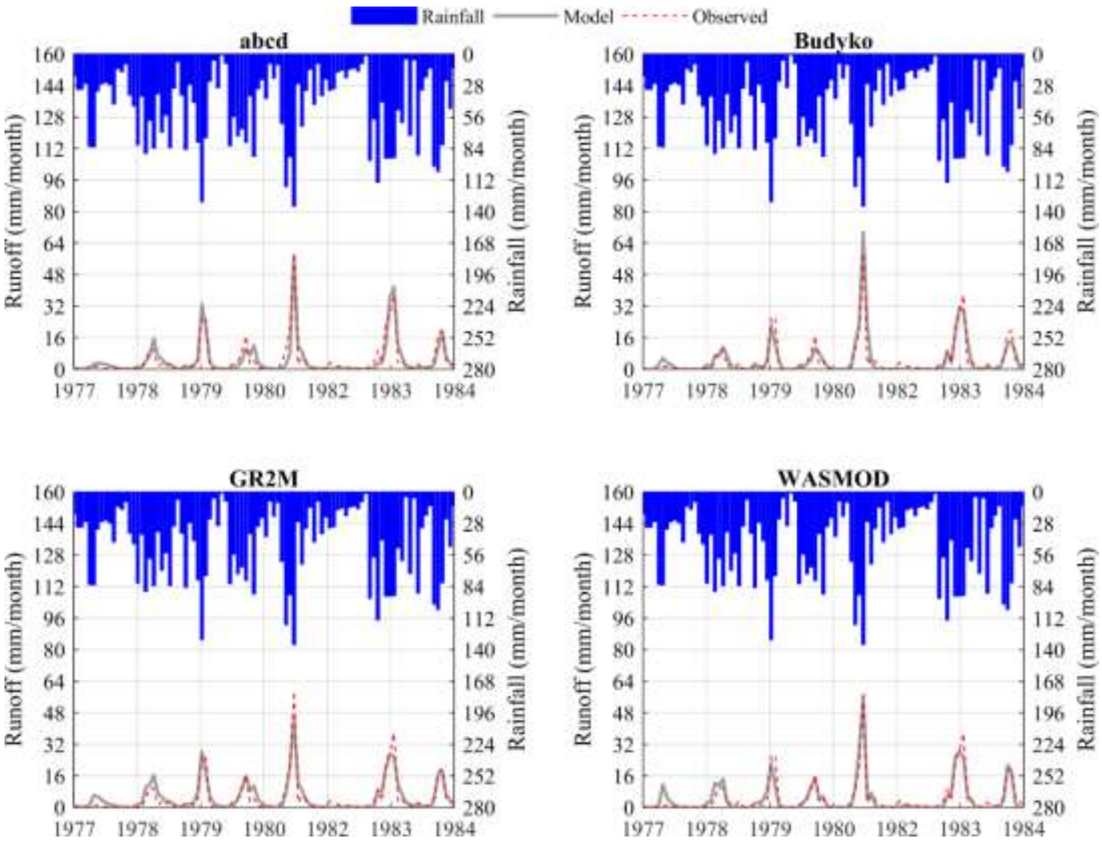

Figure S 57. Hydrographs simulated in the P2 period with the P3 parameter set.

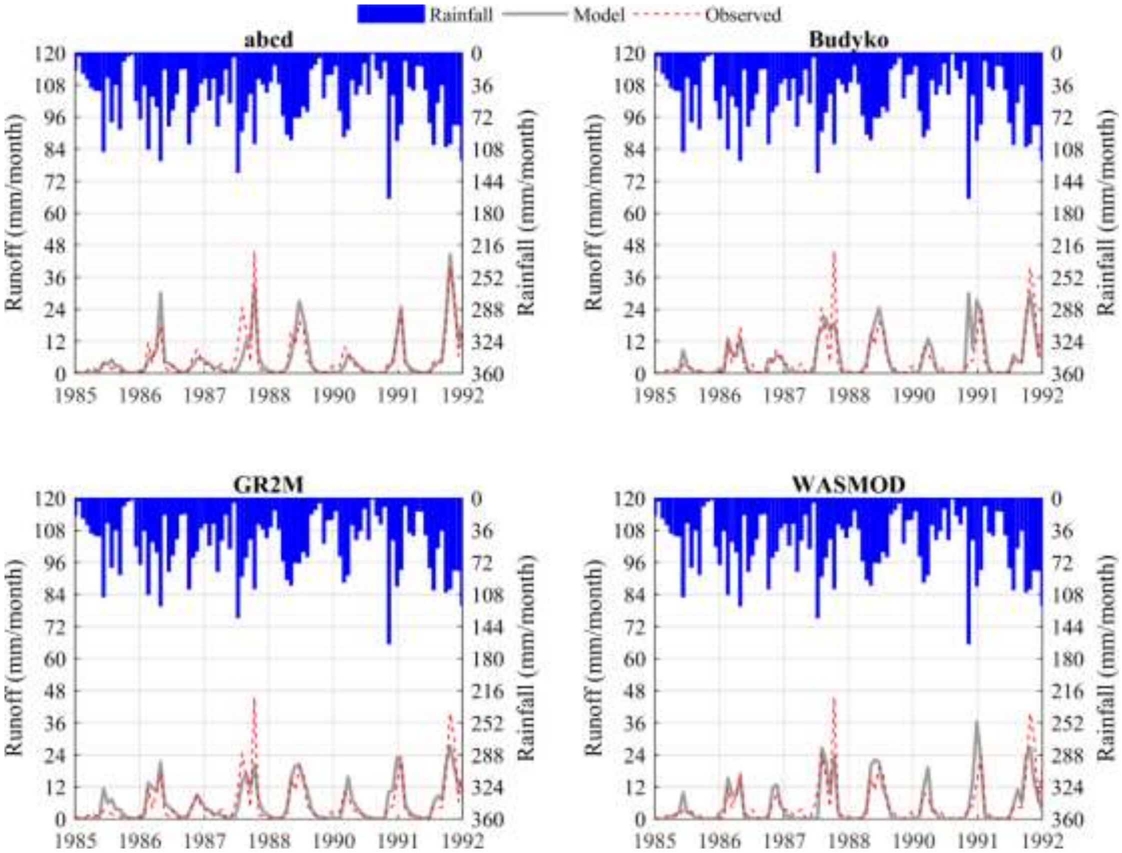

Figure S 58. Hydrographs obtained in the calibration in the P3 period.

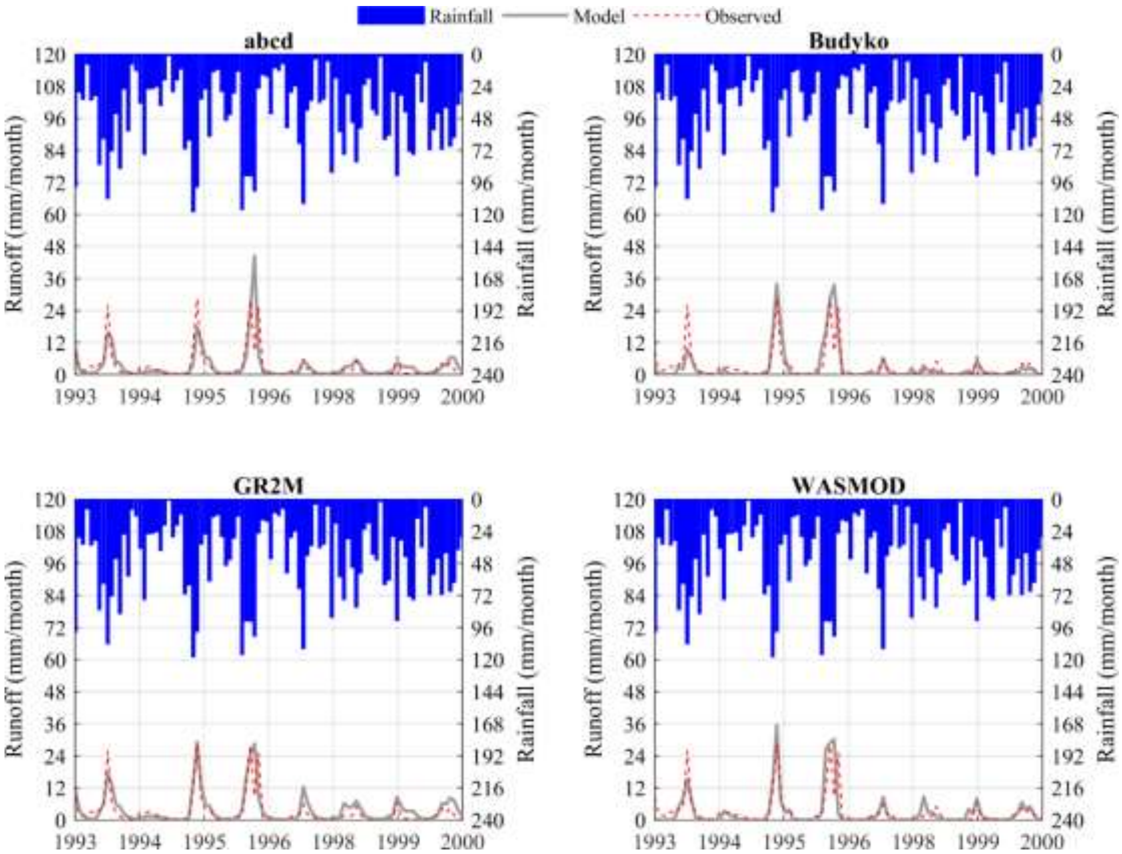

Figure S 59. Hydrographs simulated in the P4 period with the P3 parameter set.

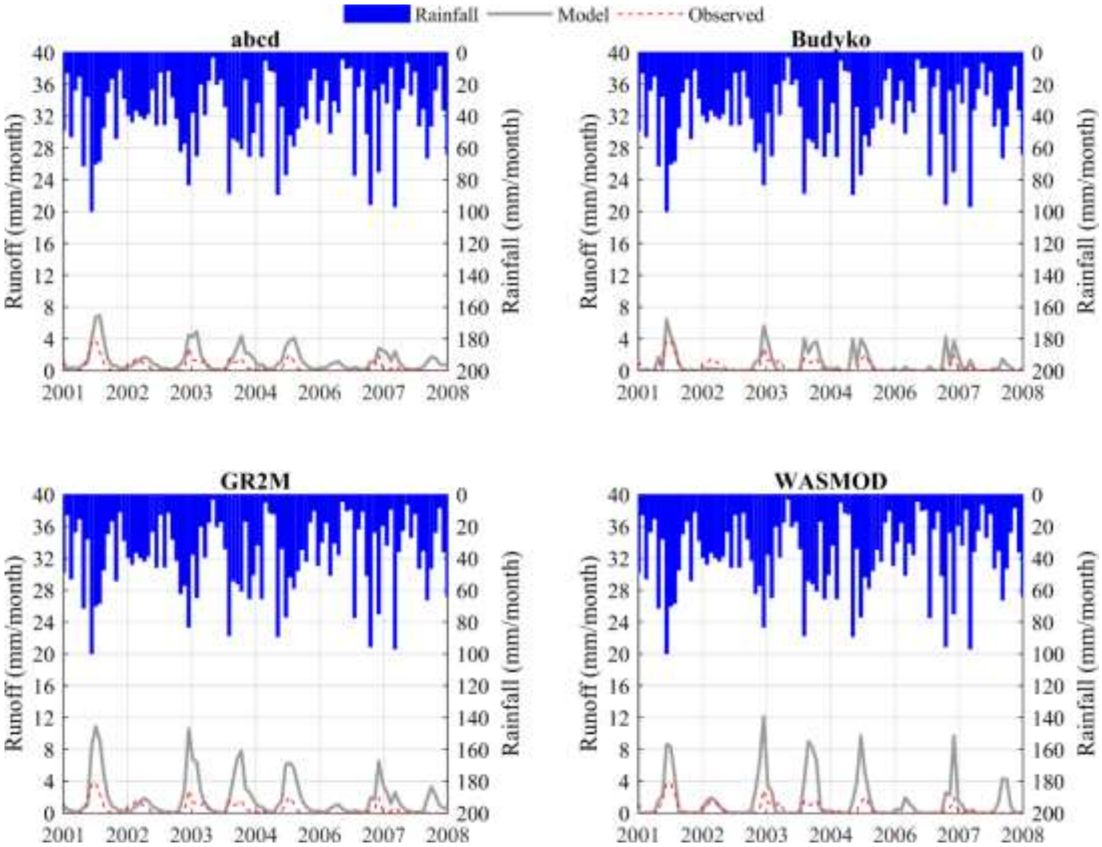

Figure S 60. Hydrographs simulated in the P5 period with the P3 parameter set.

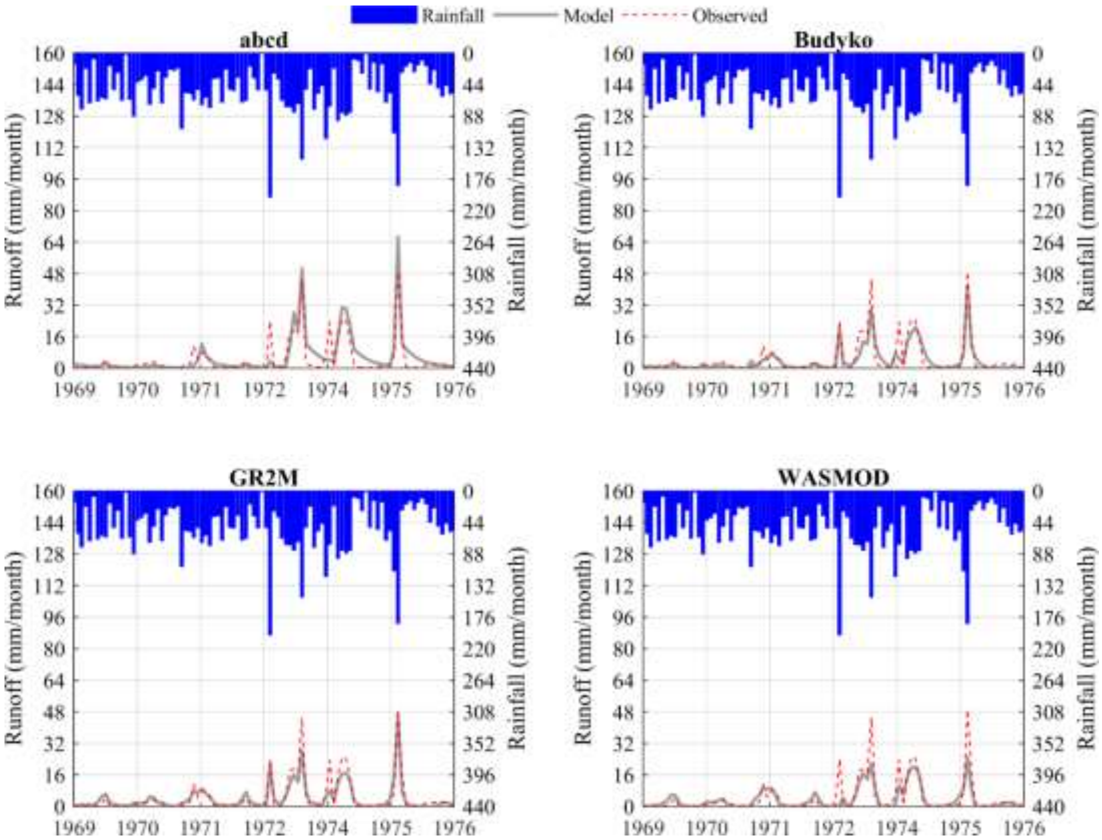

Figure S 61. Hydrographs simulated in the P1 period with the P4 parameter set.

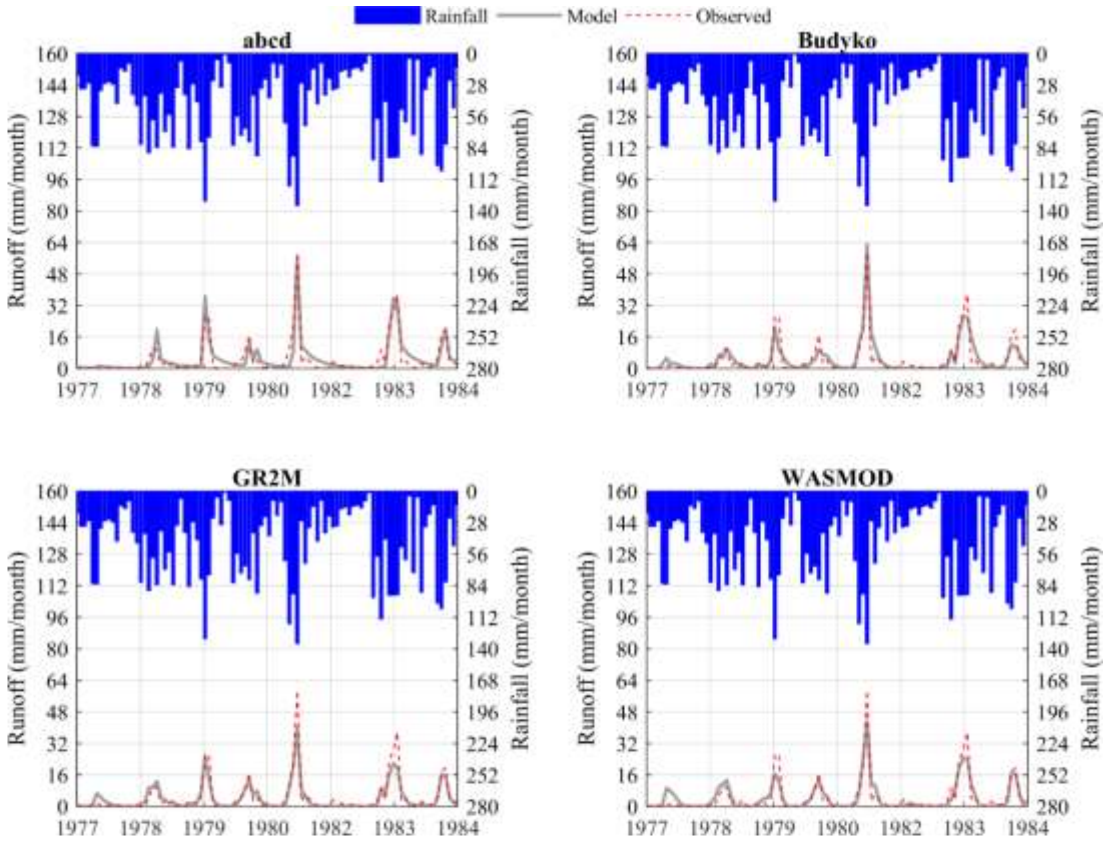

Figure S 62. Hydrographs simulated in the P2 period with the P4 parameter set.

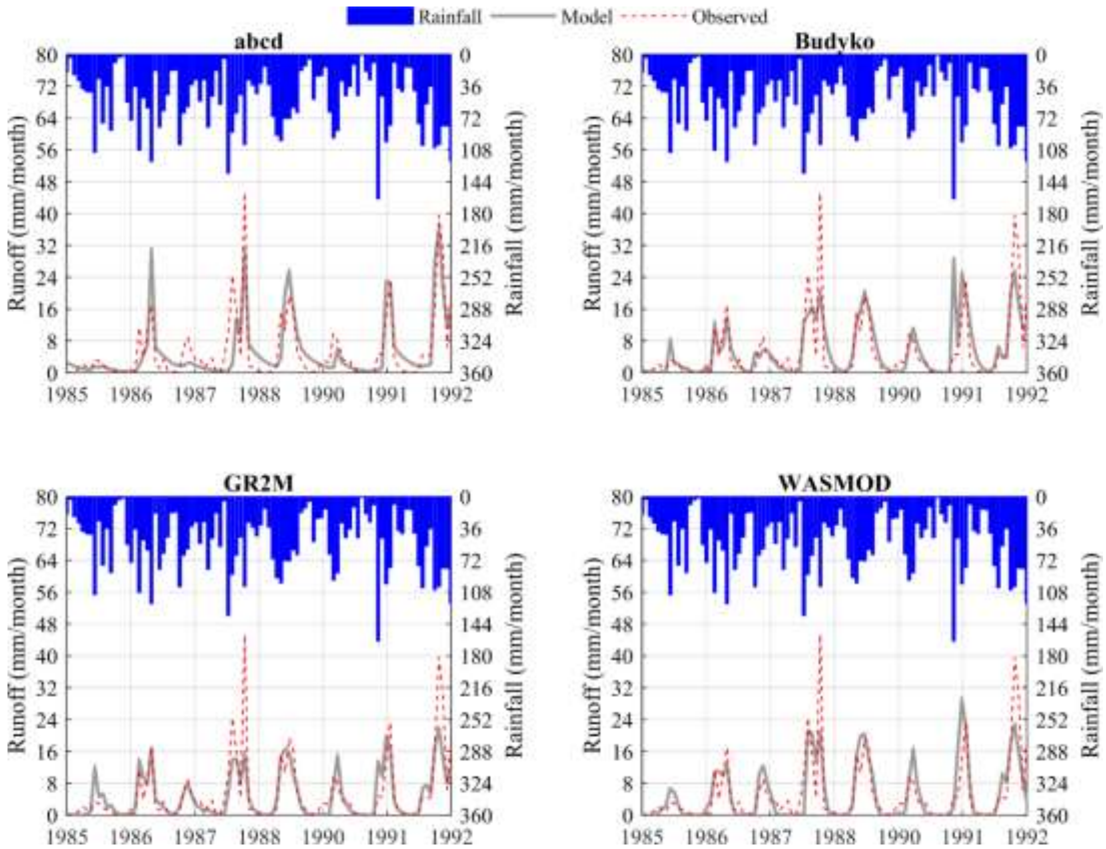

Figure S 63. Hydrographs simulated in the P3 period with the P4 parameter set.

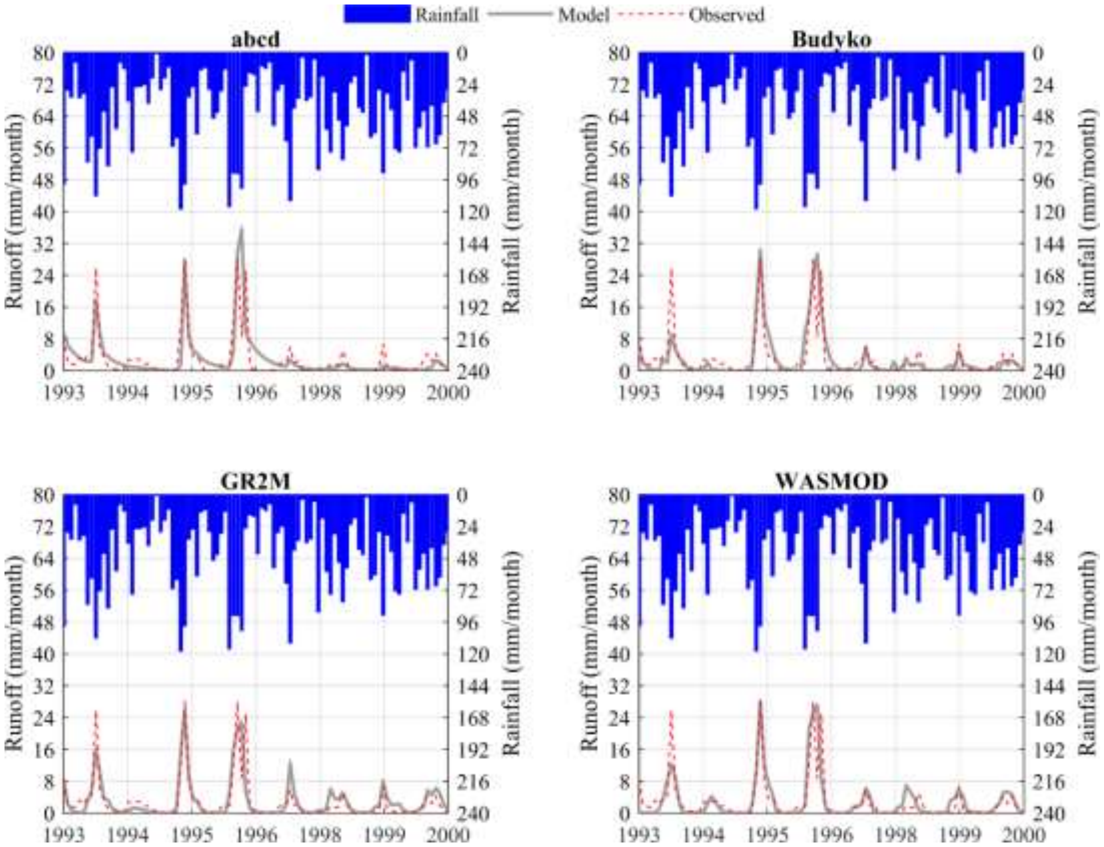

Figure S 64. Hydrographs obtained in the calibration in the P4 period.

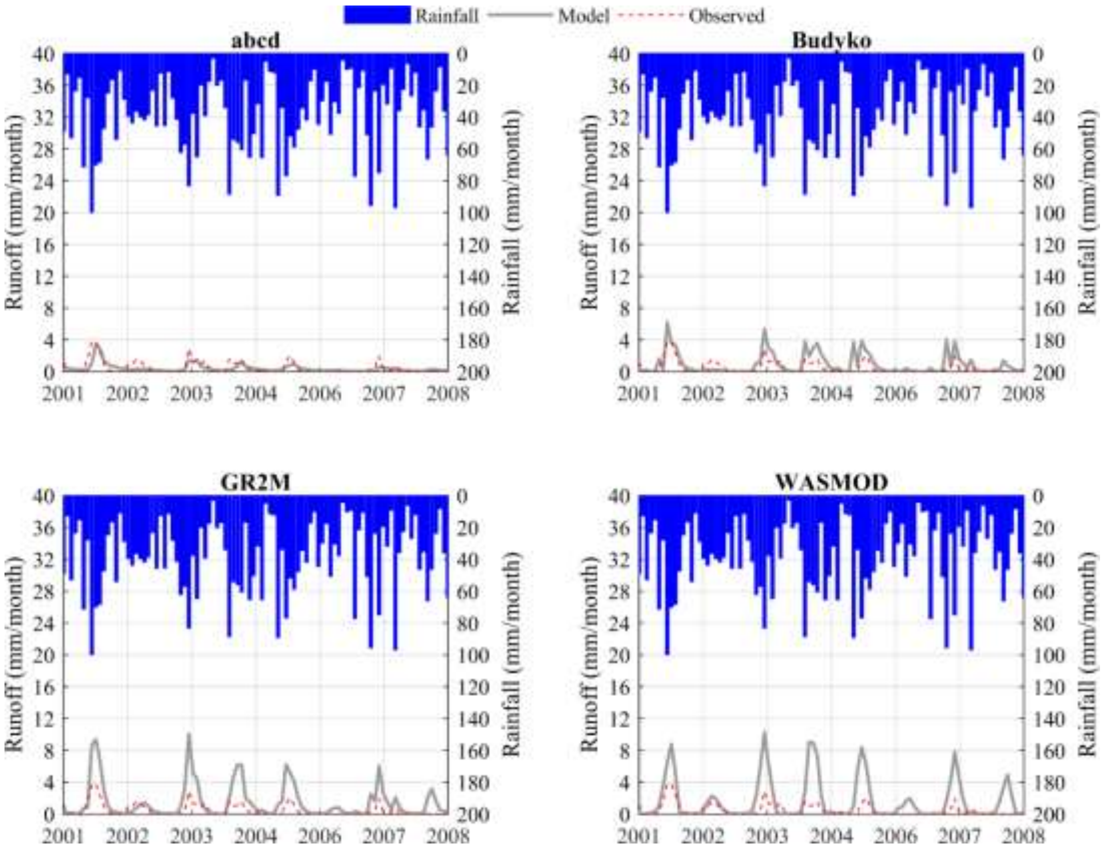

Figure S 65. Hydrographs simulated in the P5 period with the P4 parameter set.

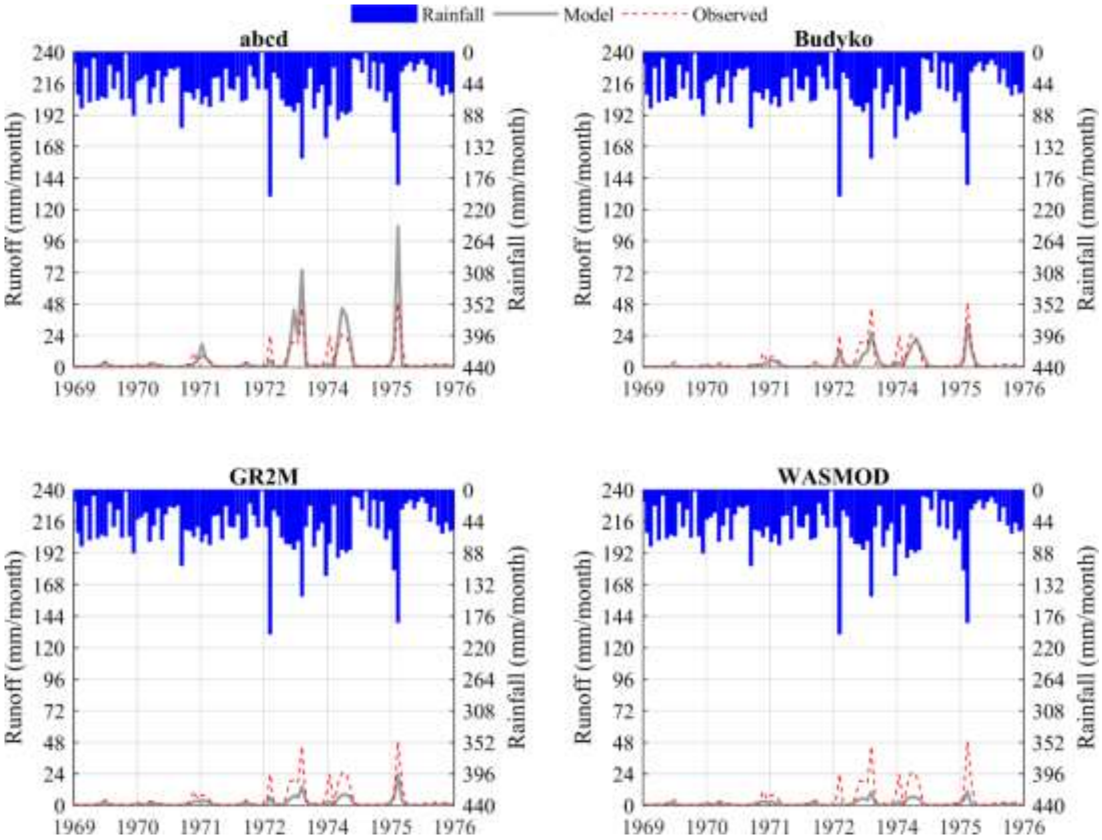

Figure S 66. Hydrographs simulated in the P1 period with P5 parameter set.

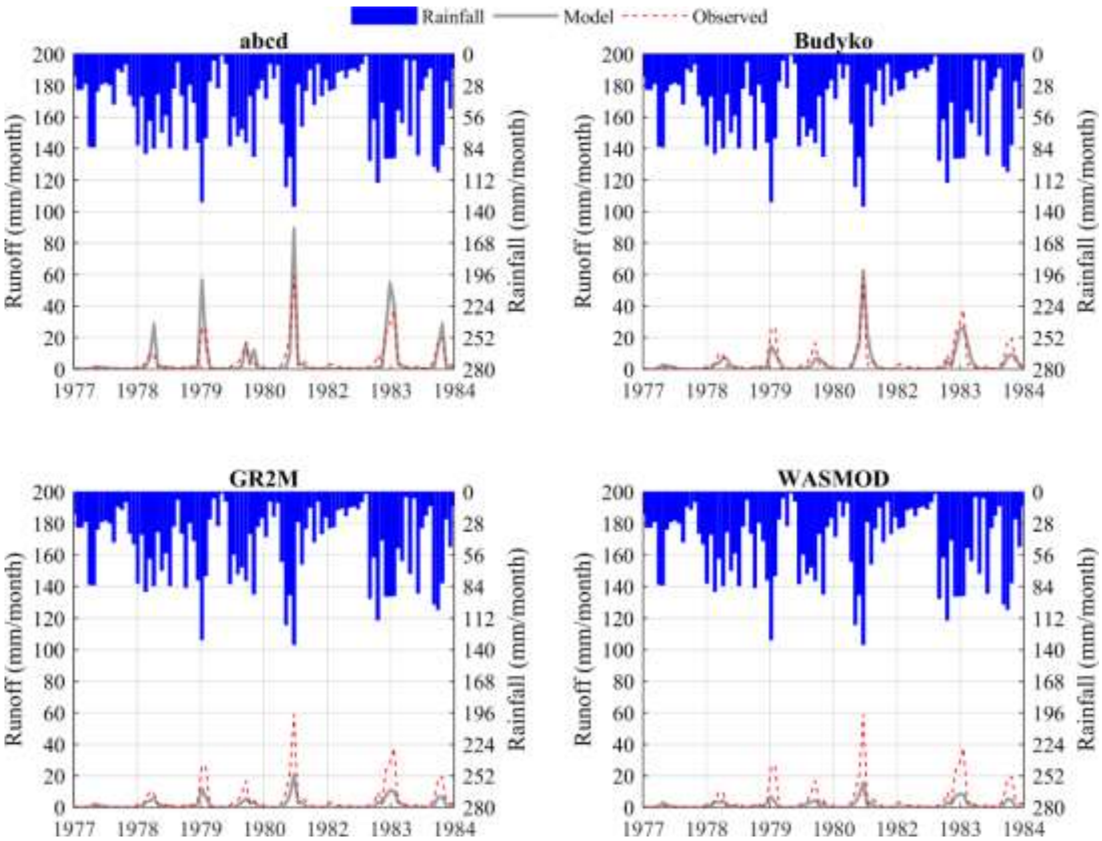

Figure S 67. Hydrographs simulated in the P2 period with the P5 parameter set.

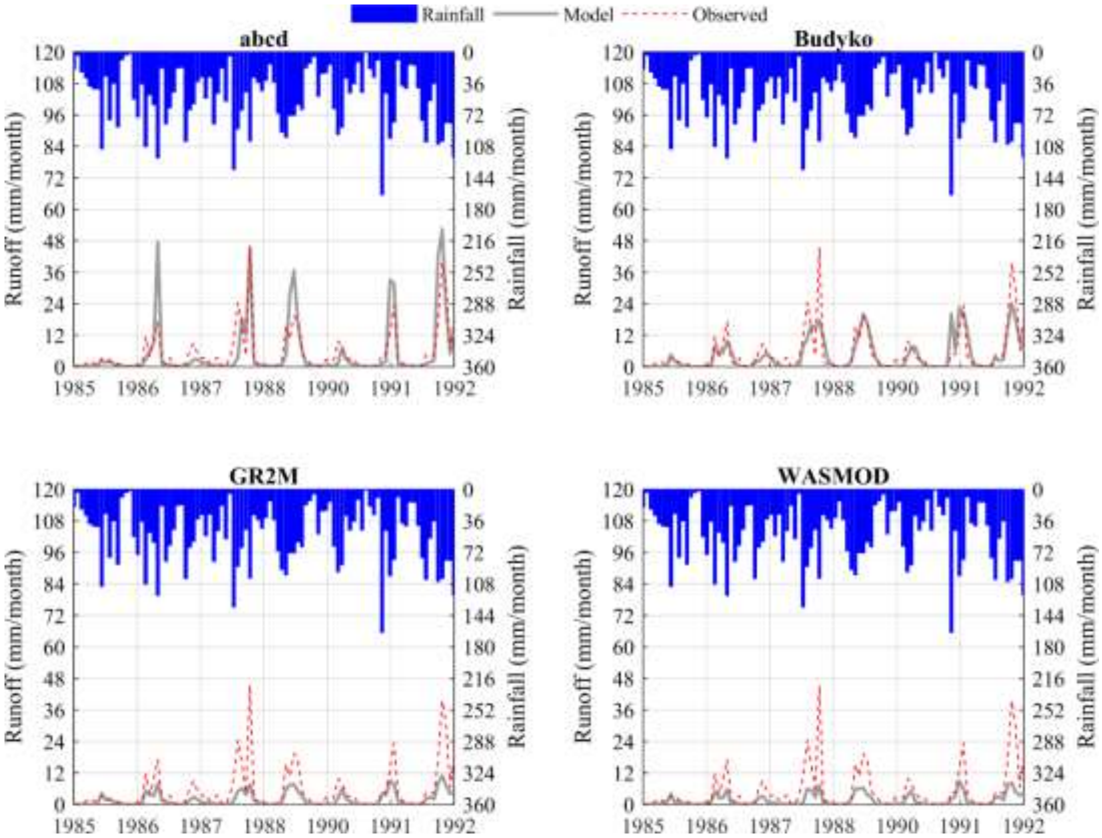

Figure S 68. Hydrographs simulated in the P3 period with the P5 parameter set.

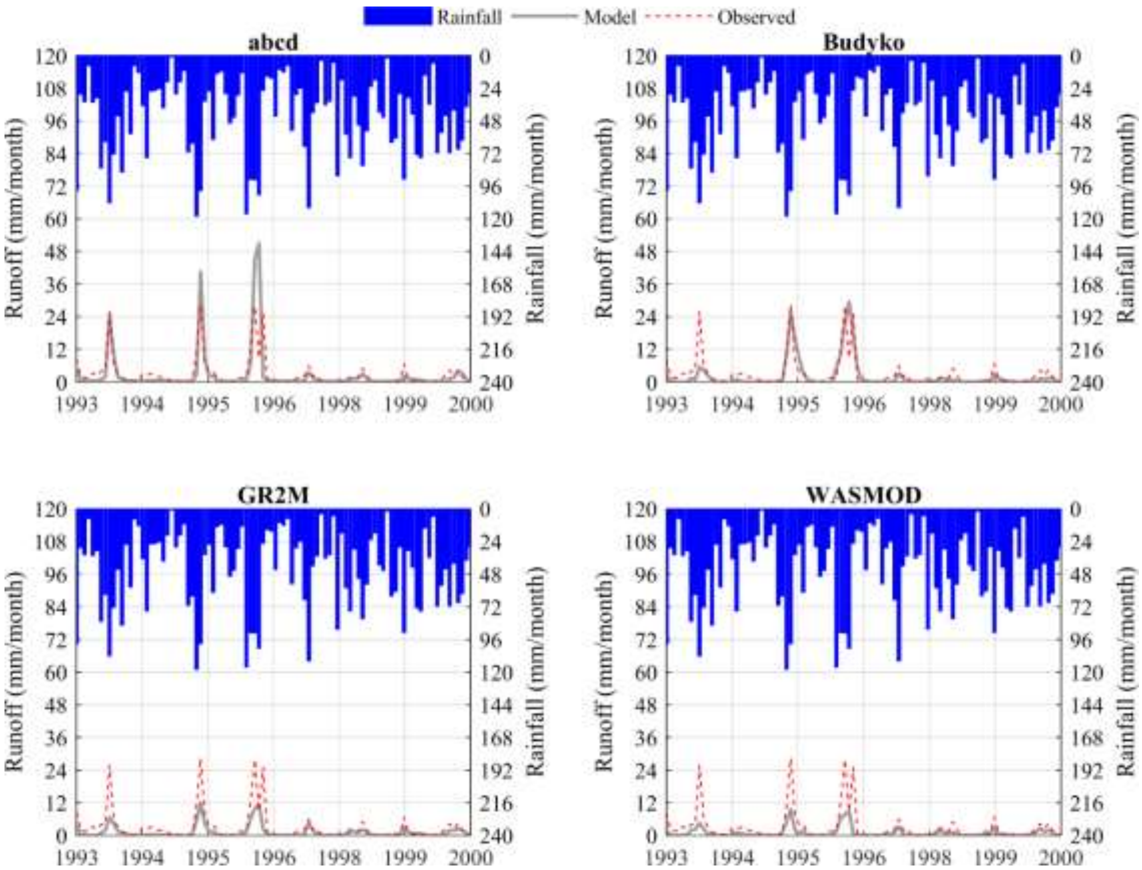

Figure S 69. Hydrographs simulated in the P4 period with the P5 parameter set.

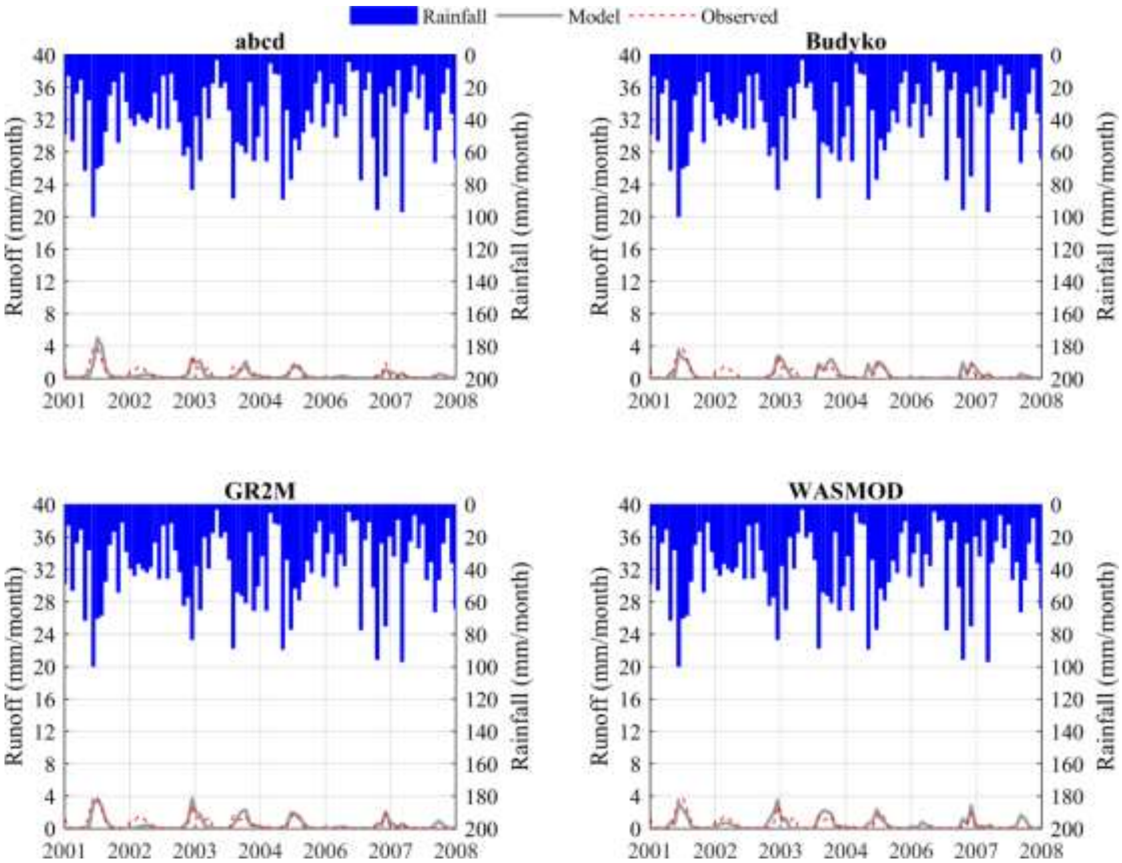

Figure S 70. Hydrographs obtained in the calibration in the P5 period.

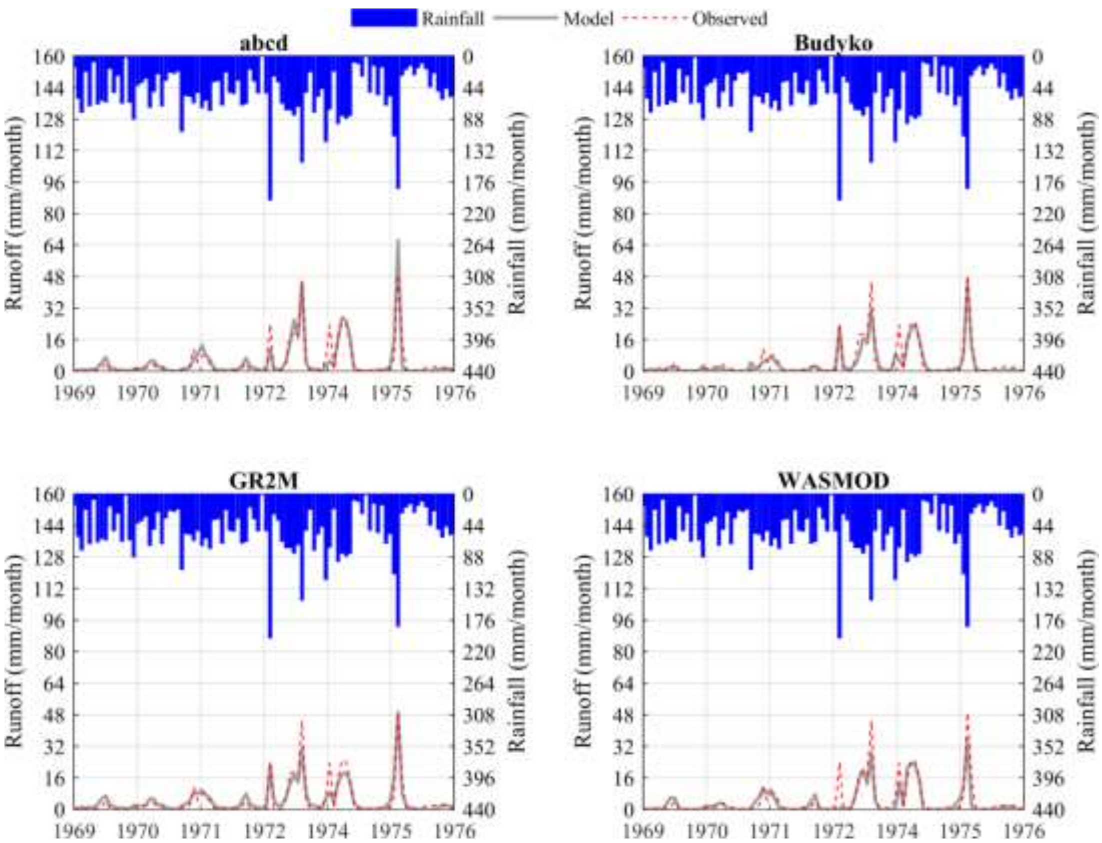

Figure S 71. Hydrographs simulated in the P1 period with the CP parameter set.

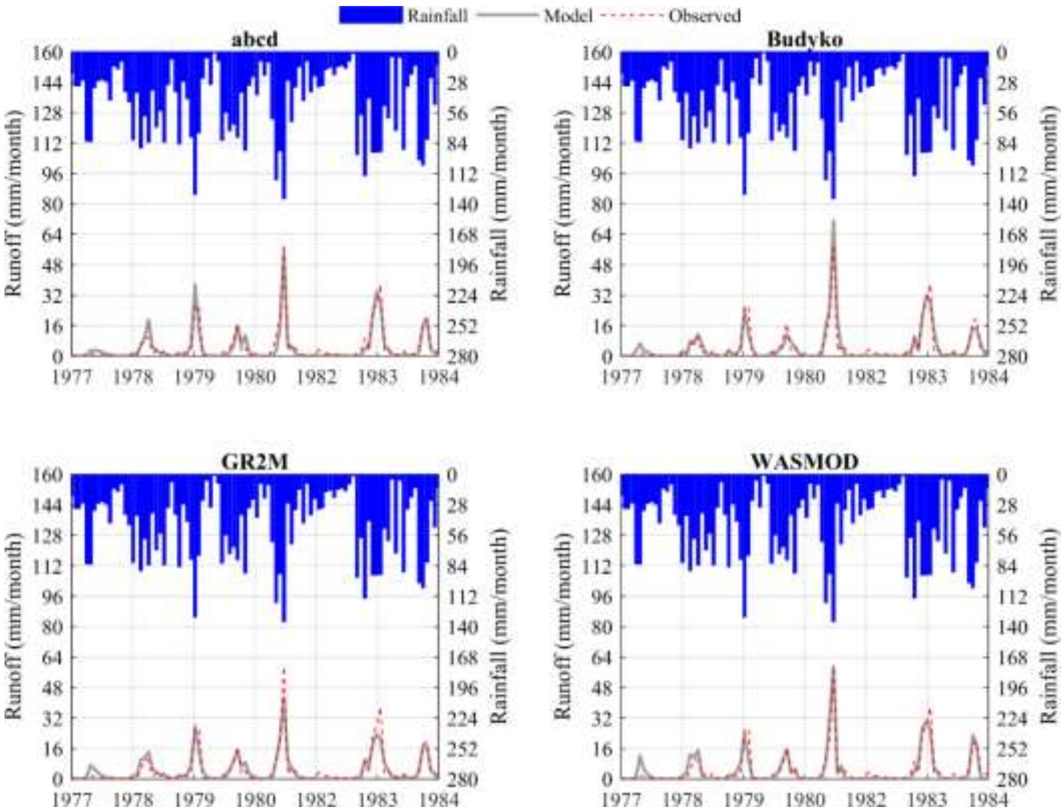

Figure S 72. Hydrographs simulated in the P2 period with the CP parameter set.

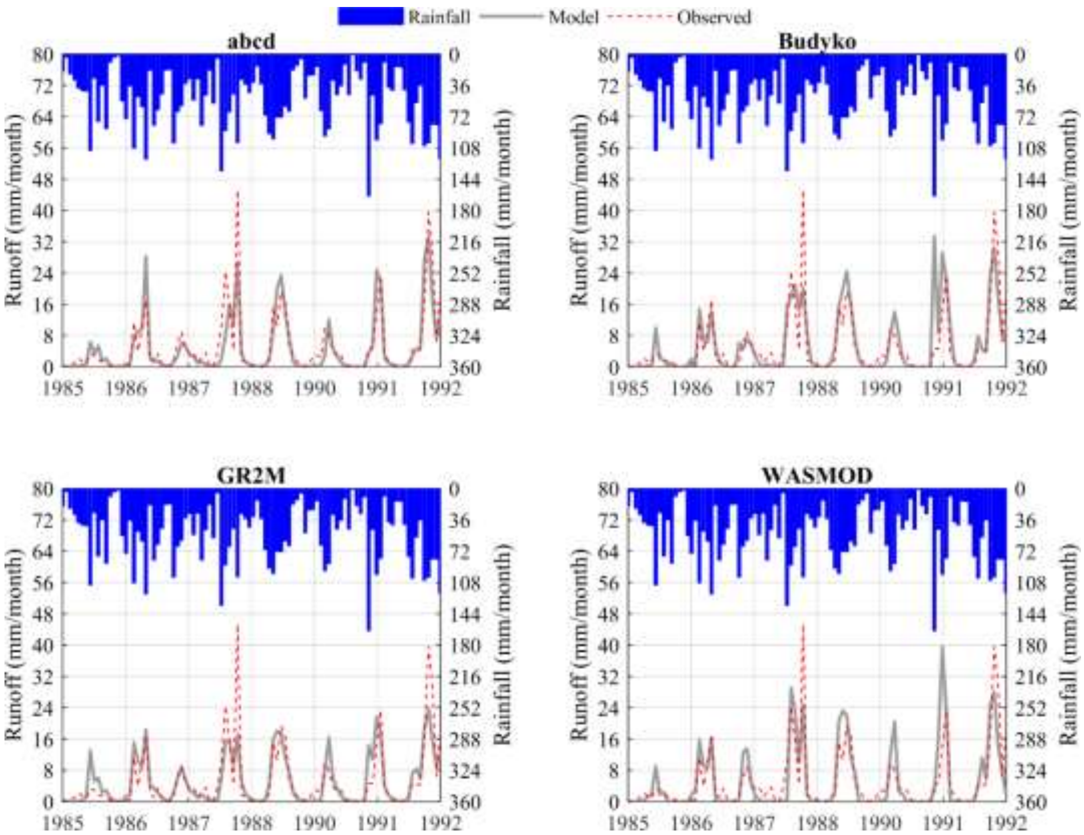

Figure S 73. Hydrographs simulated in the P3 period with the CP parameter set.

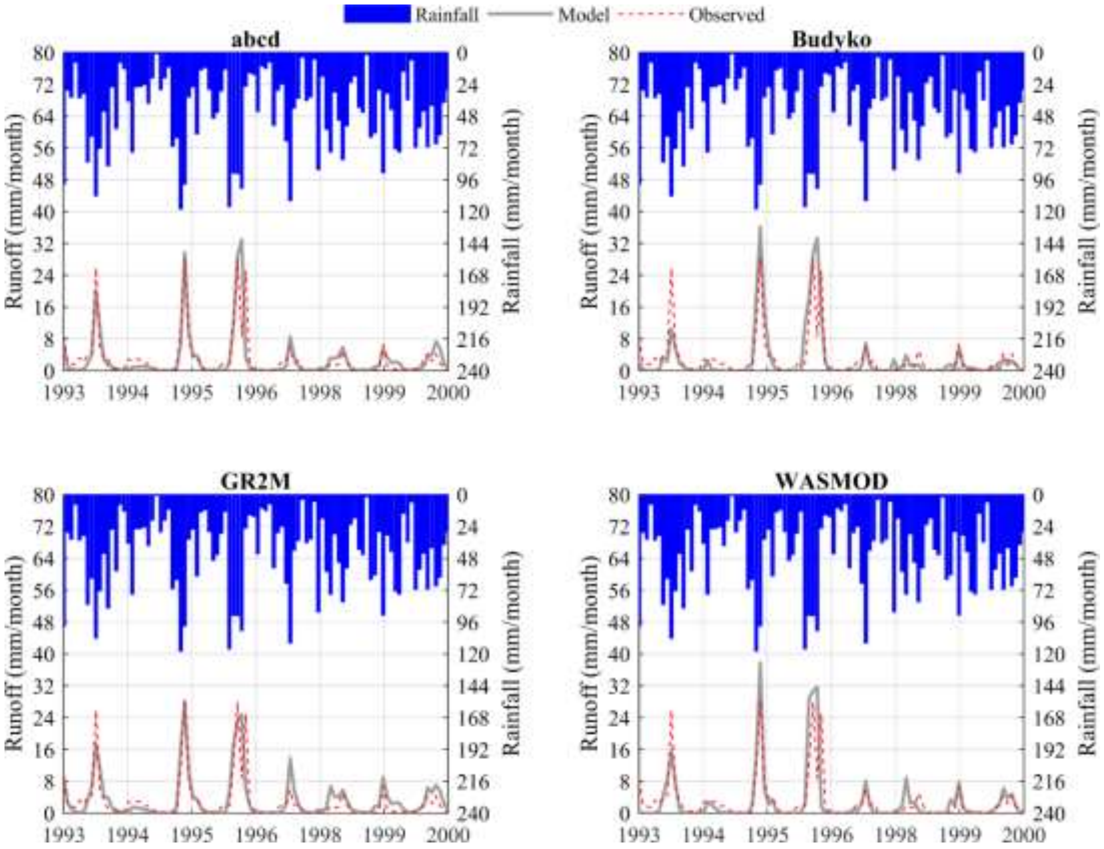

Figure S 74. Hydrographs simulated in the P4 period with the CP parameter set.

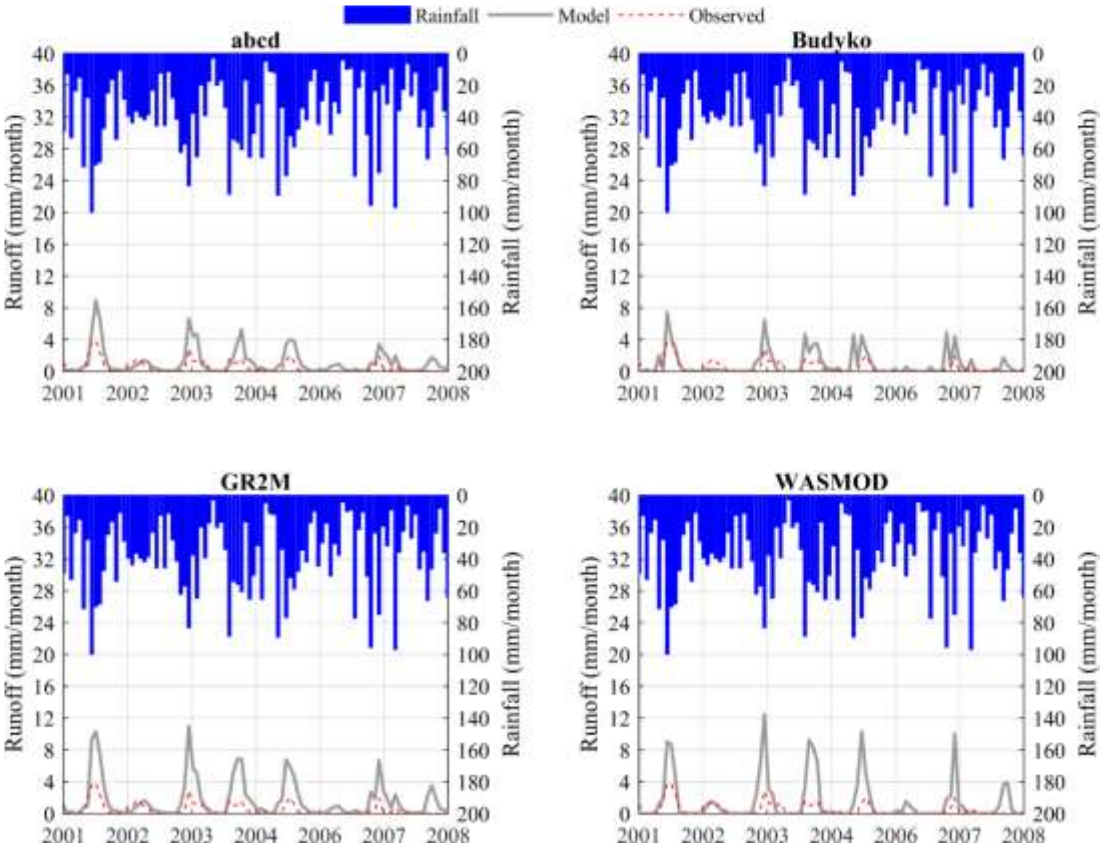

Figure S 75. Hydrographs simulated in the P5 period with the CP parameter set.

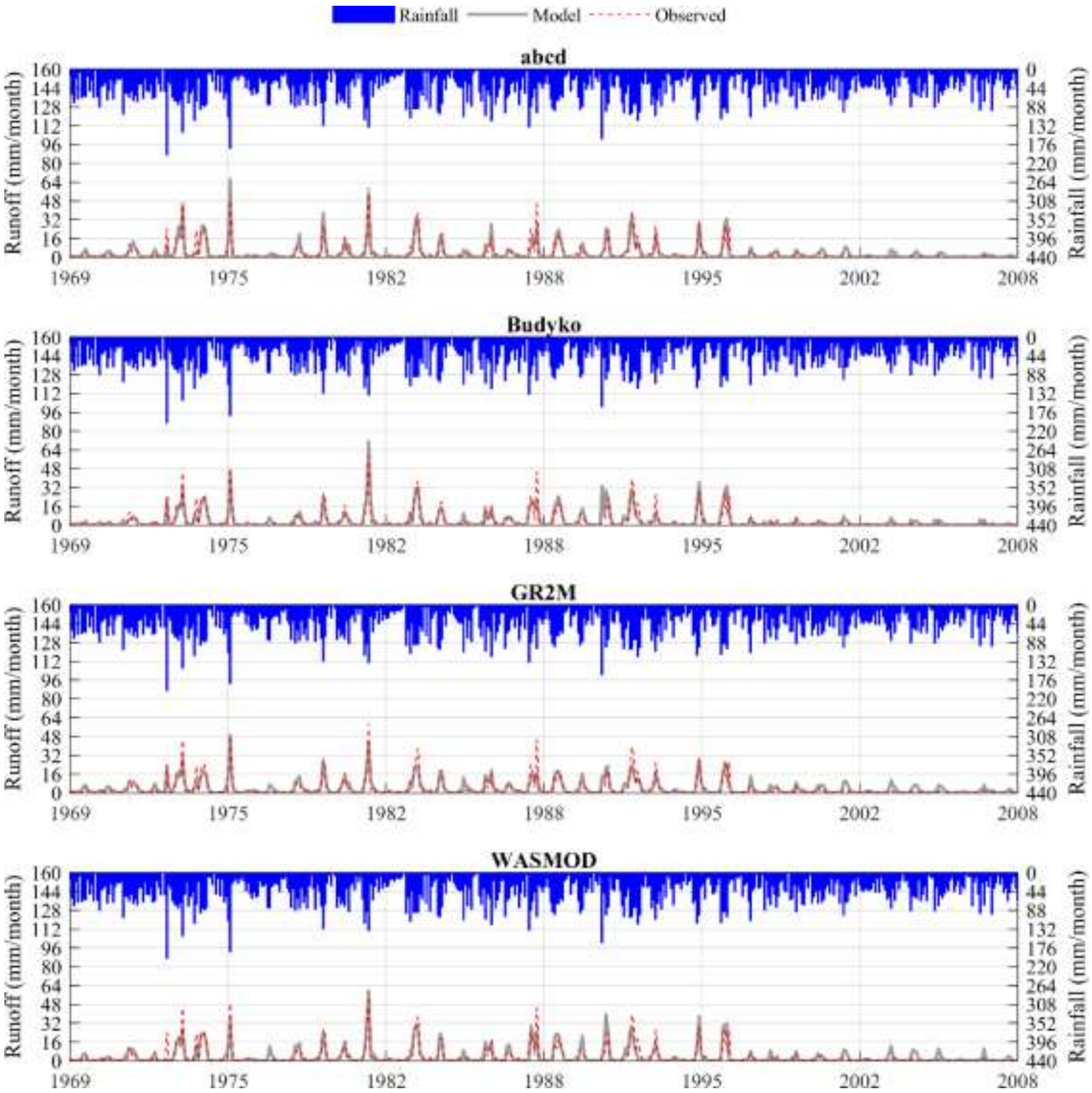

Figure S 76. Hydrographs simulated in calibration in the CP period.

C.7 Intra-annual flow distribution

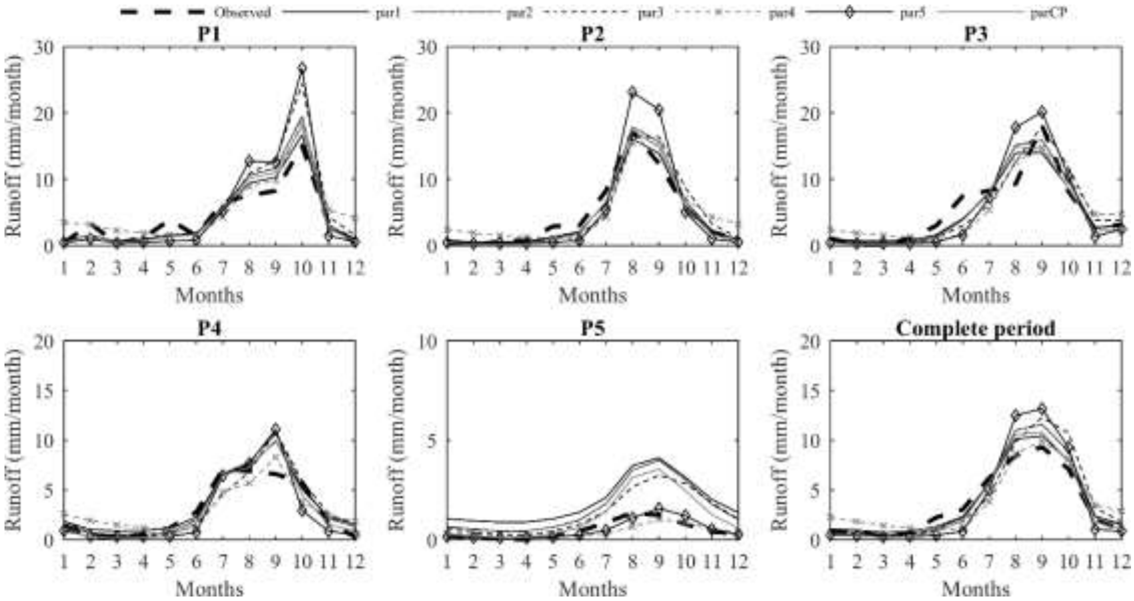

Figure S 77. Inter-annual flow distribution simulated with the *abcd* model.

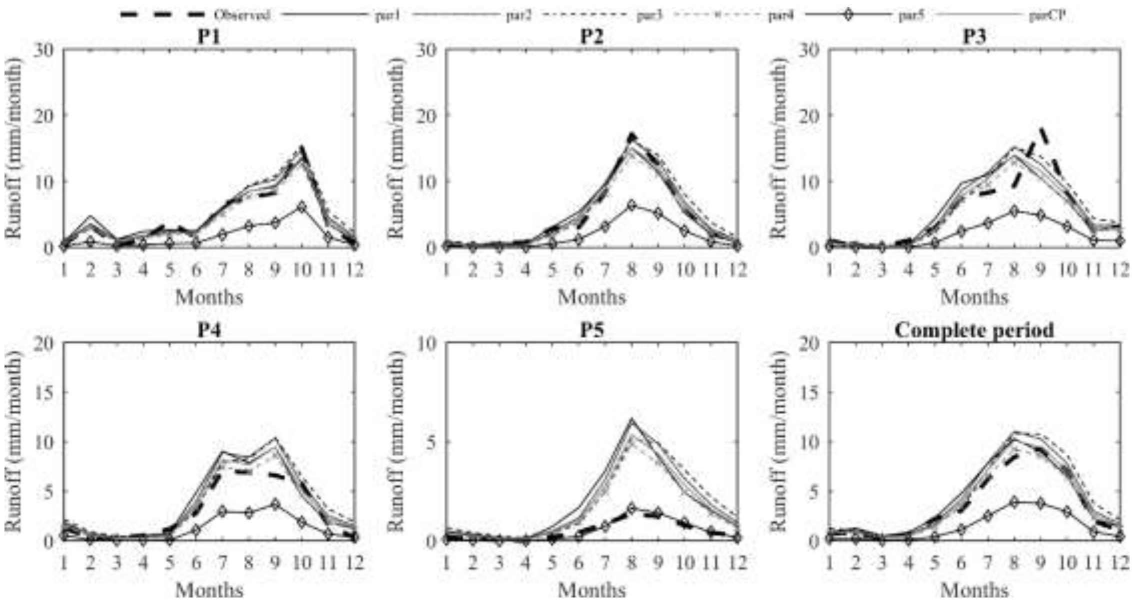

Figure S 78. Inter-annual flow distribution simulated with the GR2M model.

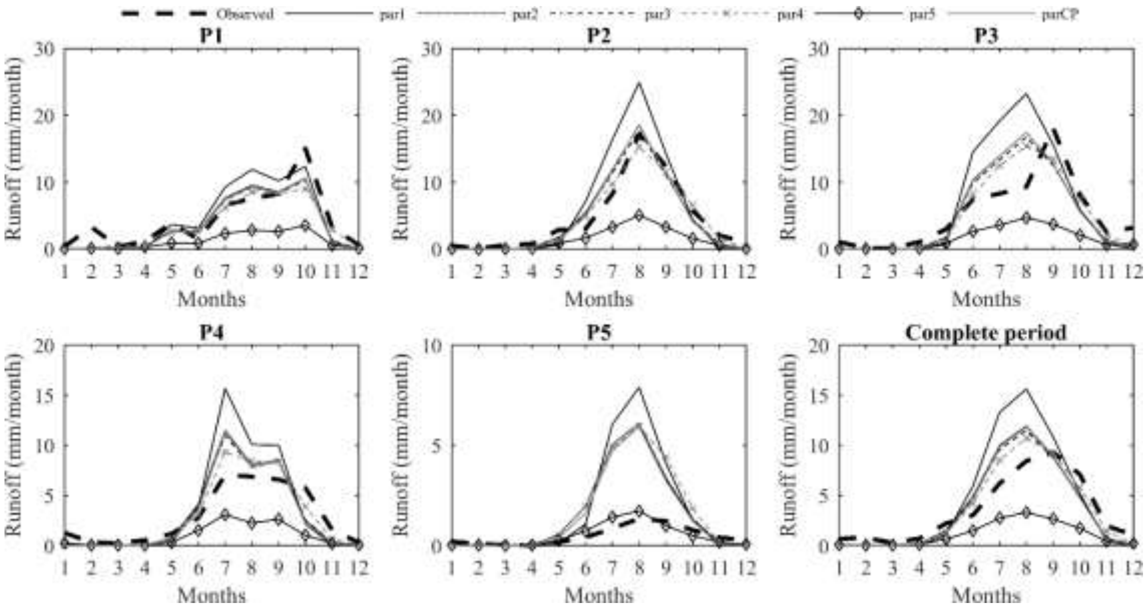

Figure S 79. Inter-annual flow distribution simulated with the WASMOD model.

C.8 Rainfall-runoff (Q-P) relationships

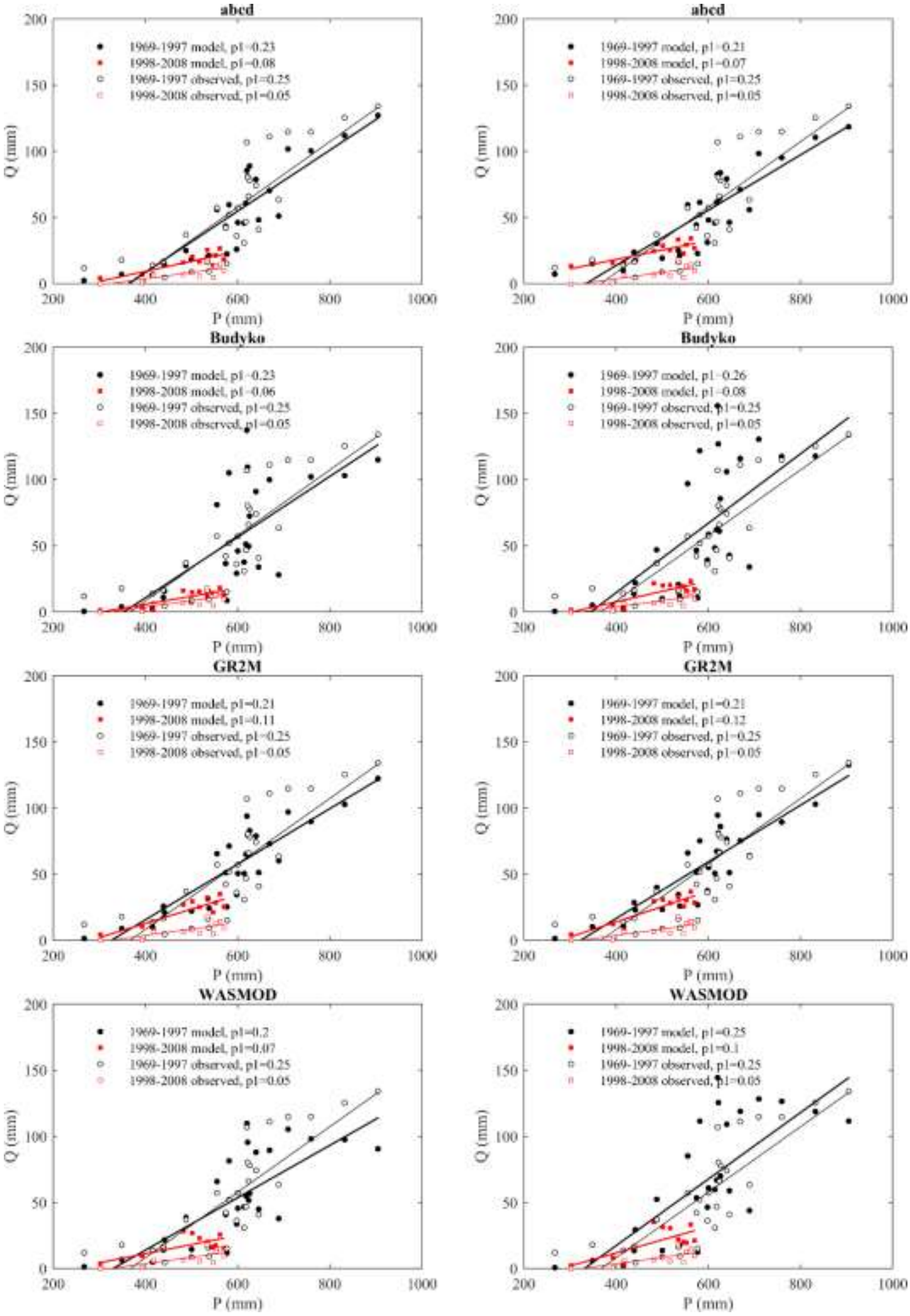

Figure S 80. The Q-P relationships simulated by MWB models in the complete period with the CP (left panels) and P1 parameter sets (right panels). Slope of each regression line p_1 is given in the graphs.

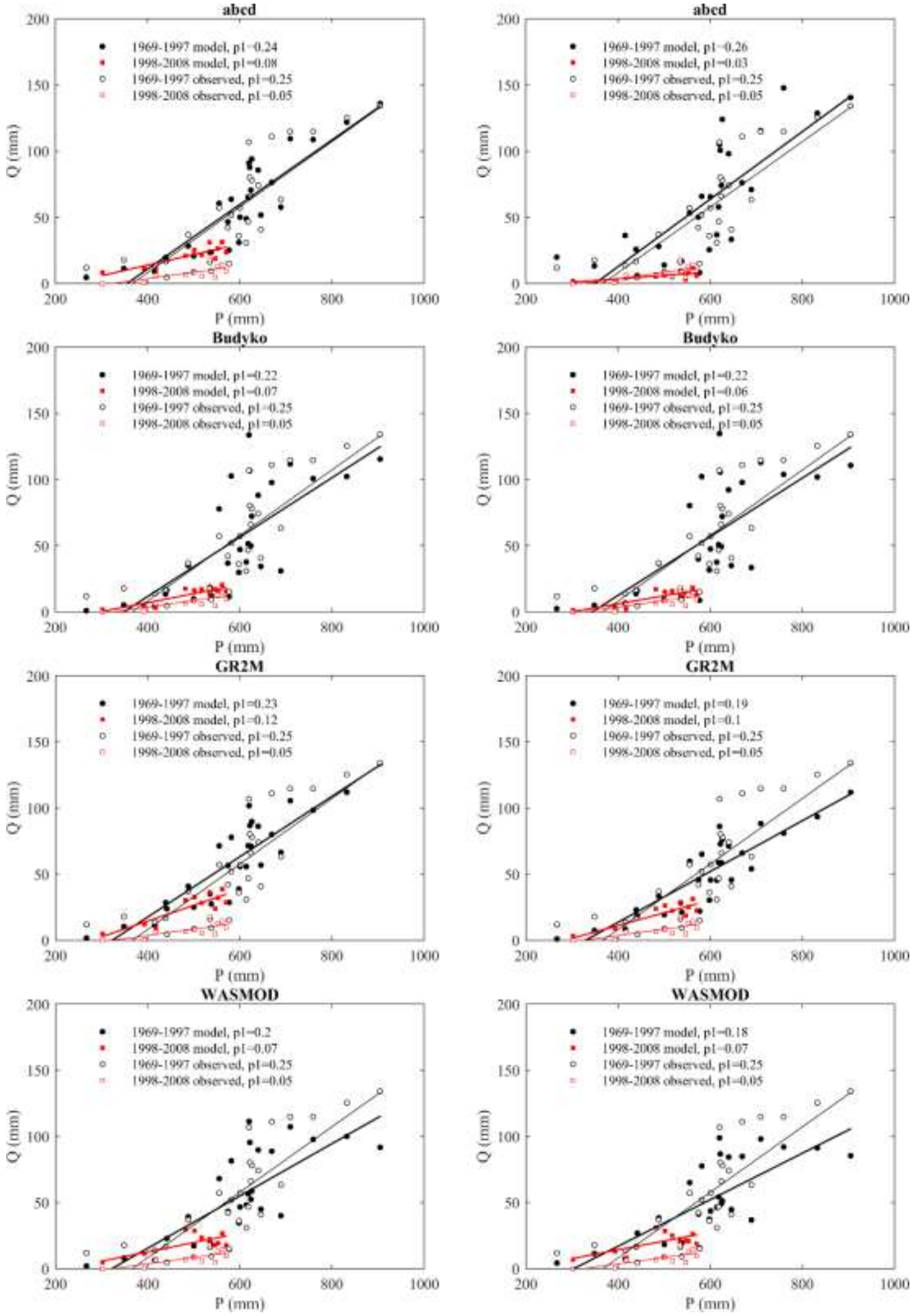

Figure S 81. Q-P relationships obtained from the observed and simulated annual runoff with the P2 (left panels) and P4 parameter sets (right panels). Slope of each regression line p_1 is given in the graphs.

C.9 GLUE results

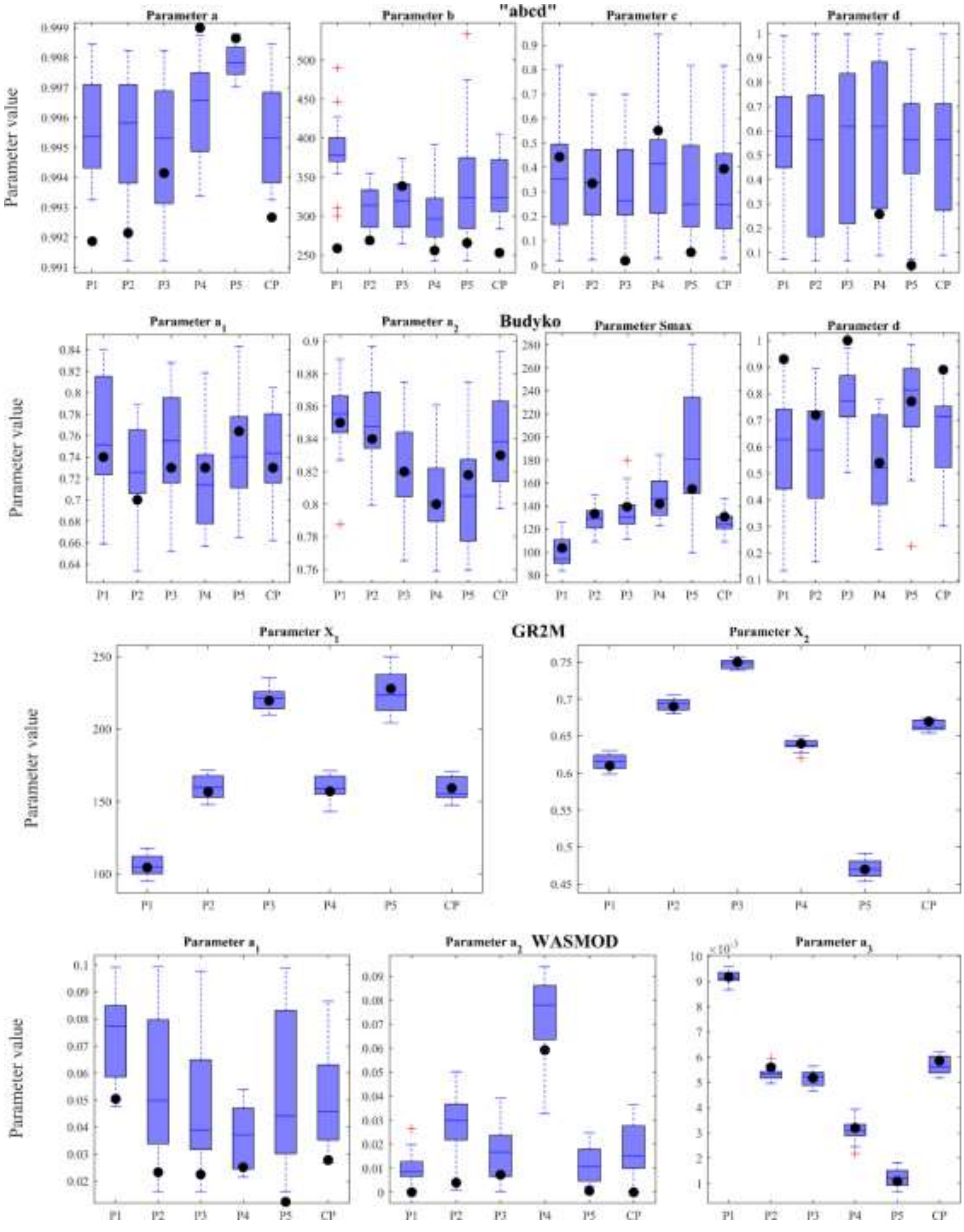

Figure S 82. Boxplot of GLUE behavioural parameters

Table S 8. Relative ranges of simulated water balance components (SR_{rel}) with GLUE behavioural parameters across the simulation periods

Model	SR_{rel}						
	P1	P2	P3	P4	P5	CP	mean
			Actual evapotranspiration, *E*				
abcd	0.28	0.20	0.20	0.24	0.36	0.21	**0.25**
Budyko	0.10	0.08	0.09	0.09	0.09	0.08	**0.09**
GR2M	0.07	0.05	0.04	0.07	0.08	0.05	**0.06**
WASMOD	0.02	0.13	0.11	0.10	0.19	0.06	**0.10**
			Soil water storage, *S*				
abcd	1.84	0.63	0.73	1.23	2.37	1.01	**1.30**
Budyko	0.21	0.17	0.14	0.15	0.12	0.15	**0.16**
GR2M	0.26	0.19	0.18	0.25	0.43	0.20	**0.25**
WASMOD	0.05	0.31	0.24	0.23	0.52	0.14	**0.25**
			Groundwater storage, *G*				
abcd	2.22	2.90	76.91	2.64	75.88	2.30	**27.14**
Budyko	2.43	2.33	0.94	0.98	1.82	1.36	**1.64**
GR2M	0.20	0.13	0.09	0.08	0.45	0.11	**0.18**
			Baseflow, Q_b				
abcd	52.5	205.5	2075.1	1.6	15.3	2710.9	**843.5**
Budyko	1.2	1.1	0.7	0.7	0.8	0.8	**0.9**
WASMOD	0.2	0.5	0.3	0.4	0.6	0.3	**0.4**
			Direct runoff, Q_d				
abcd	0.50	0.44	0.54	0.78	0.78	0.46	**0.58**
Budyko	0.37	0.34	0.53	0.37	0.62	0.36	**0.43**
WASMOD	0.06	0.16	0.28	0.25	0.55	0.13	**0.24**
			Total runoff, *Q*				
abcd	0.39	0.42	0.45	0.52	0.72	0.39	**0.48**
Budyko	0.44	0.40	0.46	0.46	0.71	0.39	**0.48**
GR2M	0.05	0.04	0.04	0.04	0.07	0.03	**0.04**
WASMOD	0.05	0.14	0.18	0.21	0.43	0.10	**0.18**

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