

Appendix C. Table of Statistics of Single Site Reconstructions.

The table below lists statistics of single-site reconstruction (SSR) models. Statistics apply to the regression models as calibrated by regression of square-root-transformed annual flow on lagged residual tree-ring chronologies and their square, as described in the paper.

Table C1. Statistics of single-site reconstruction (SSR) models.

N ^a	Code ^b	Calibration ^c			Validation ^d		Reconstruction ^e	
		Predictors	Years	R^2_{adj}	RE	r	Years	M
1	B27	1110100000	1906-2014	0.64	0.63	0.79	1382-2014	S
2	B32	1000000000	1906-2014	0.44	0.44	0.65	1413-2014	S
3	BMC	1000000000	1906-2010	0.17	0.16	0.37	901-2010	LS
4	KR2	1000000000	1906-2001	0.33	0.31	0.54	1589-2001	S
5	DEN	1000000100	1906-2001	0.26	0.23	0.46	1604-2001	S
6	DMS	1001000000	1906-2001	0.26	0.26	0.49	1472-2001	S
7	KAW	1000000000	1906-2002	0.30	0.30	0.52	1497-2002	S
8	SJR	1100000000	1906-2002	0.36	0.34	0.57	1560-2002	S
9	CTN	1000000000	1906-2013	0.35	0.34	0.57	945-2013	S
10	CTS	1010000000	1906-2013	0.44	0.43	0.65	1155-2013	S
11	EVG	1000000000	1906-2009	0.41	0.42	0.63	901-2009	LS
12	GFE	1010000000	1906-2013	0.44	0.43	0.64	901-2013	LS
13	GFN	0110000000	1906-2013	0.32	0.32	0.55	1085-2013	S
14	GFS	1000000000	1906-2013	0.36	0.35	0.58	936-2013	S
15	KAI	1000000000	1906-2009	0.22	0.21	0.44	901-2009	LS
16	LCM	1000100000	1906-2014	0.31	0.31	0.54	1424-2014	S
17	LOB	1010000000	1906-2014	0.25	0.25	0.48	1336-2014	S
18	LPK	0100000000	1906-2013	0.11	0.11	0.30	901-2013	LS
19	LSC	1000000000	1906-2014	0.09	0.08	0.24	1381-2014	S
20	MHC	1000000000	1906-2010	0.31	0.31	0.54	1301-2010	S
21	PMN	0100000000	1906-2013	0.26	0.24	0.47	1338-2013	S
22	RRT	1010000000	1906-2013	0.10	0.06	0.23	1416-2013	S
23	SBP	1010000000	1906-2013	0.34	0.33	0.56	901-2013	LS
24	CPE	1100000101	1906-2009	0.20	0.18	0.40	901-2009	LS
25	UCJ	1100010000	1906-2009	0.16	0.14	0.35	901-2009	LS
26	EPW	1100100000	1906-2009	0.13	0.09	0.28	901-2009	LS
27	LVF	1000100000	1906-2009	0.28	0.27	0.50	1510-2009	S
28	STA	1000000000	1906-2009	0.02	0.01	0.03	1638-2009	
29	UCP	0000001000	1906-2009	0.05	0.04	0.14	1561-2009	
30	ALU	1000100000	1906-2008	0.48	0.48	0.68	1455-2008	S
31	BLU	1000110000	1906-2008	0.21	0.19	0.42	1157-2008	S
32	DRU	1000100000	1906-2008	0.31	0.31	0.54	1362-2008	S
33	FBK	1000100000	1906-2008	0.41	0.39	0.61	901-2008	LS
34	HRK	1000000000	1906-2008	0.24	0.24	0.47	903-2008	LS
35	LVU	1000100000	1906-2008	0.38	0.37	0.60	1426-2008	S
36	LJK	1000010000	1906-2008	0.31	0.30	0.53	1341-2008	S
37	LUP	0000000100	1906-2009	0.03	0.03	0.10	1471-2009	

38	LCU	1000100000	1906-2008	0.33	0.33	0.56	1420-2008	S
39	PPB	1000000000	1906-2008	-0.01	-0.01	-0.25	1586-2008	
40	AGK	1000000000	1906-2008	0.41	0.40	0.62	901-2008	LS
41	AMC	1000000000	1906-2002	0.29	0.29	0.52	1480-2002	S
42	CLK	1000010000	1906-2002	0.44	0.44	0.65	1624-2002	S
43	DIB	1000100010	1906-2002	0.38	0.38	0.60	1523-2002	S
44	DPR	1000000000	1906-2003	0.31	0.31	0.53	1535-2003	S
45	DCP	1000000000	1906-2003	0.11	0.10	0.27	1606-2003	S
46	FIG	1010000000	1906-2001	0.30	0.31	0.53	1296-2001	S
47	FLK	1000000000	1906-2001	0.23	0.22	0.44	1640-2001	S
48	HAS	1000000000	1906-2002	0.29	0.29	0.51	1463-2002	S
49	MDI	1110010100	1906-2010	0.72	0.70	0.83	1585-2010	S
50	MUR	1100000000	1906-2002	0.18	0.18	0.39	1535-2002	S
51	PCH	1100100100	1906-2001	0.52	0.49	0.69	1514-2001	S
52	PPC	1000000000	1906-2002	0.23	0.23	0.46	1541-2002	S
53	PNM	1000000000	1906-2001	0.27	0.27	0.50	1582-2001	S
54	PUT	1000010010	1906-2002	0.43	0.42	0.63	1537-2002	S
55	IND	1000001101	1906-2001	0.26	0.22	0.45	1498-2001	S
56	TUO	1100000000	1906-2003	0.17	0.17	0.38	1411-2003	S
57	SND	0000000100	1906-2010	0.04	0.04	0.13	901-2010	
58	CSP	1000001000	1906-2010	0.13	0.10	0.28	901-2010	LS
59	SMU	1000000000	1906-2003	-0.00	-0.01	-0.22	901-2003	
60	PTL	0000100000	1906-2004	0.02	0.01	0.01	1403-2004	
61	CTL	1000000000	1906-2004	0.05	0.05	0.17	1404-2004	
62	CRS	1000000000	1906-2007	0.07	0.08	0.23	1615-2007	S
63	CSR	1000000000	1906-2010	0.12	0.11	0.29	1515-2010	S
64	LLR	1000000000	1906-2010	0.16	0.14	0.35	1570-2010	S
65	LTS	1000000000	1906-2010	0.14	0.12	0.31	1454-2010	S
66	MSC	1000000000	1906-2010	0.21	0.20	0.42	1512-2010	S
67	PMC	1000000000	1906-2010	0.07	0.06	0.20	1495-2010	S
68	PIN	1000000000	1906-2010	0.22	0.21	0.43	1573-2010	S
69	PSD	1000000000	1906-2010	0.00	-0.00	-0.06	1479-2010	

^aSite number; sites ordered as in rows of spreadsheet in Appendix A.

^bSite code, cross-referenced to site code in Appendix A.

^cCalibration statistics. "Predictors" are ten logical pointers indicating whether in (1) or not in (0) model. From left right, odd digits (1,3,...,9) refer to tree-ring index at lags 0, -1, -2, +1 and +2 years relative to year of flow. Even digits (2, 4,...,10) refer to squared tree-ring index at those same lags. For example, for site #1 (B27) the predictors of flow, y_t , in year t are x_t , x_t^2 , x_{t-1} , and x_{t-2} , where x_t is the tree-ring index in year t . "Years" are the starting and ending years of the model calibration period, referring to the years of flow (lagged predictors would mean some earlier and later tree-ring data could be included in calibration). " R_{adj}^2 " is the regression R^2 adjusted for number of predictors in the model.

^dValidation statistics. “RE” is the reduction of error, a measure of skill of prediction when the model is applied to data not used in calibration (see Methods). RE here is computed from the leave-9-out cross-validation residuals. “r” is the Pearson correlation between the observed flows and the cross-validation predictions. Statistical significance of r was evaluated by a Monte Carlo method described in Appendix B. For all SSRs actually used in the long or short reconstructions (last column) the probability that the population correlation is less than or equal to 0 (one-sided test) is rejected ($p < 0.01$) according to the Monte Carlo results.

^eReconstruction statistics. “Years” are the first and last year of time coverage by the SSR. “L” and “S” indicate whether the SSR was used in the multi-site “long” and “short” versions of reconstruction. Presence in “L” will depend primarily on time coverage by the SSR. Some tree-ring sites are not used in “L” or “S.” Such sites were flagged as unusable by at least one of five criteria described in the Appendix B.