

Figure S 1. Metadata type associated with valid break points.

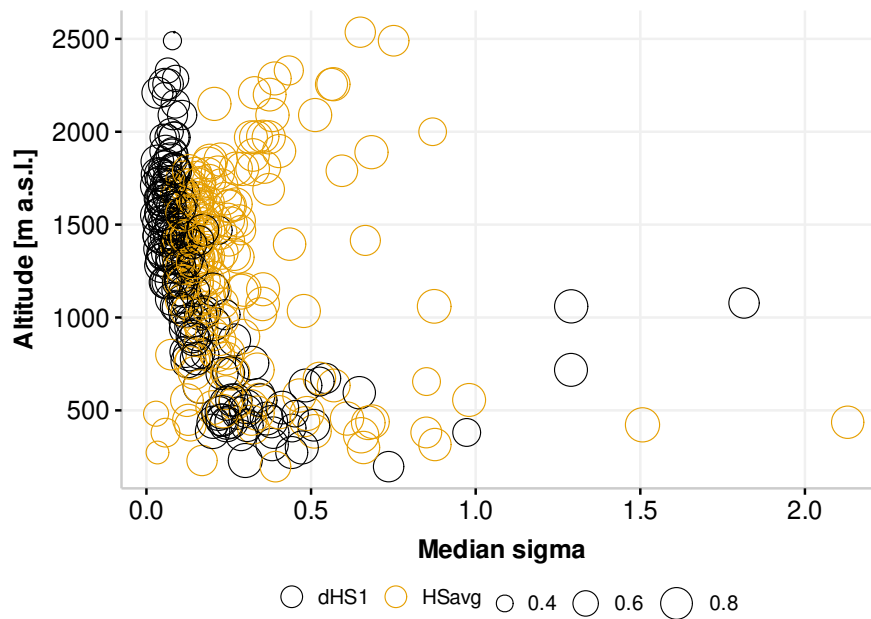


Figure S 2. For both variables HSavg and dHS1, the median sigma of the subset of 5 reference series with lowest sigma for each candidate series is plotted against the altitude of the candidate series. The size of the dots corresponds to the median correlation of these subsets. All correlation and sigma values are from HOMER.

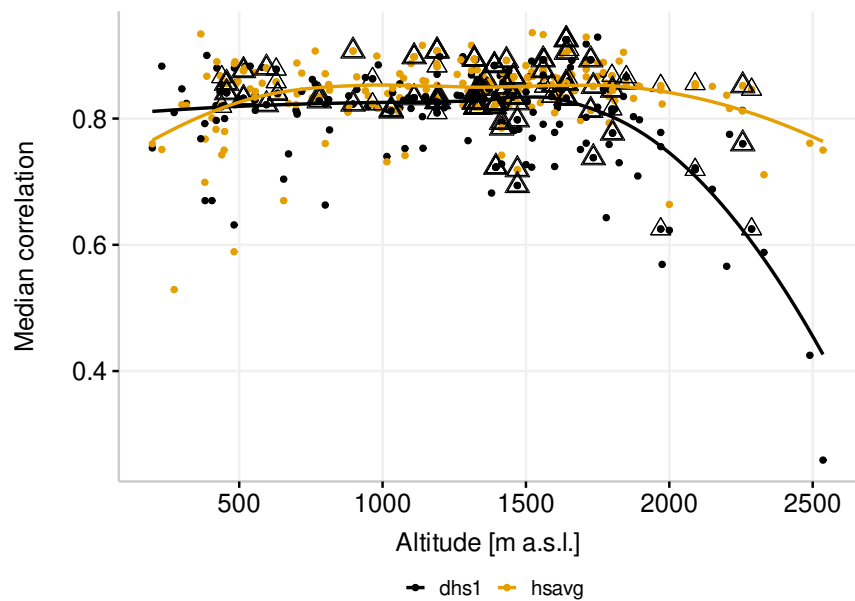


Figure S 3. For both variables HSavg and dHS1, the median correlation of the subset of 5 reference series with lowest sigma for each candidate series is plotted against the altitude of the candidate series. The coloured lines are fitted means for both dHS1 (red) and HSavg (green). Valid break points are highlighted with triangles (break identified by HOMER with thick triangles). All correlation and sigma values are from HOMER.

Name	Altitude [m a.s.l.]	mHSavg [cm]	mdHS1 [days]	Name	Altitude [m a.s.l.]	mHSavg [cm]	mdHS1 [days]
MAG	197	1	23	ABO	1325	26	131
6BE	230	1	16	5CU	1330	16	113
LUG	273	1	14	3UI	1340	55	151
RHF	300	1	25	4UL	1345	67	156
BAS	316	1	23	3SW	1350	74	157
OTL	366	1	20	1LC	1360	47	134
GRO	380	2	21	4OW	1370	81	161
AIG	381	1	17	5BE	1380	25	131
BUS	387	1	22	1SM	1390	42	139
CLA	405	0	13	URB	1395	36	142
HLL	419	1	35	4MS	1410	55	148
GVE	420	1	18	7ST	1415	24	132
WYN	422	2	38	SMM	1415	24	135
BIL	433	1	29	5OB	1420	34	144
KLO	436	1	32	5SE	1420	42	149
DEM	439	1	31	r.sus	1432	28	135
SNS	439	2	39	SED	1432	38	147
PAV	447	0	16	2AN	1440	72	164
ALT	449	1	34	ANT	1440	68	162
LUZ	456	2	37	4WI	1450	42	136
SIO	482	2	32	5SP	1457	40	148
KOP	483	1	38	5IN	1460	27	142
NEU	485	1	27	4SM	1470	30	115
PAY	490	1	27	ZNZ	1470	18	124
RAG	496	4	51	7ZN	1475	22	127
GLA	515	7	65	4FY	1500	68	161
5LQ	520	5	53	RIE	1500	40	139
LAN	538	5	54	BOS	1505	63	153
BER	555	2	42	5SA	1510	69	162
CHU	555	4	55	1JA	1520	54	146
SMA	556	2	44	1MN	1520	55	151
1IN	580	3	54	r.lar	1522	92	167
MER	595	6	70	6BG	1525	64	156
EBK	629	8	79	2GA	1550	71	162
GRA	634	1	33	4GR	1560	31	134
VIS	655	3	47	5DF	1560	50	157
THS	672	7	71	x.DAV	1560	51	160
ILZ	698	11	84	1GB	1565	58	154
5TH	701	6	68	x.MVE	1590	44	134
HAI	702	4	70	4ZE	1600	39	145
MAS	718	2	52	ZER	1600	36	147
LAG	755	4	60	3MB	1610	47	155
3WA	765	11	90	5HI	1610	64	162
STG	779	6	77	GRC	1617	23	129
1LB	800	10	95	r.wol	1625	68	159
7BR	800	1	31	2RI	1640	57	155
LTB	812	10	91	6SB	1640	61	158

5KU	815	21	119	MUE	1641	58	160
5TC	879	9	79	1MR	1650	56	159
SSE	882	17	112	5MA	1655	41	149
GSS	897	14	101	7SC	1660	39	152
EIN	910	18	112	4BP	1670	27	137
5PU	940	19	101	7CA	1690	57	150
2GU	950	13	93	7FA	1710	40	151
ELM	965	26	124	7LD	1710	53	166
6AM	980	24	118	7ZU	1710	36	147
CHD	985	13	102	DMA	1710	48	158
7PV	1015	6	70	x.SAM	1726	38	154
CDF	1018	15	105	5ZV	1735	67	170
FIL	1030	13	98	7SD	1750	38	151
ENG	1035	21	124	7SN	1750	45	157
GTT	1055	30	124	5BI	1770	52	163
2OG	1060	38	141	BIV	1770	57	167
MAR	1060	2	53	2TR	1780	117	172
CHM	1073	18	109	r.pre	1789	50	160
ROB	1078	9	78	4SF	1790	47	161
5VZ	1090	19	102	6RI	1800	69	158
GOS	1099	39	139	6RP.a	1800	78	164
2GO	1110	38	137	SIA	1802	59	161
AIR	1139	31	126	7MA	1810	76	165
PIO	1141	20	107	1HB	1825	107	168
2SO	1150	20	117	ARO	1840	72	168
CUE	1152	25	117	7MZ	1850	42	152
5KR	1188	43	140	PON	1875	38	152
1GA	1190	55	147	6RO	1890	124	167
3MG	1190	27	127	r.mor	1896	64	164
5KK	1190	60	154	1GH	1970	171	174
DIS	1190	23	124	7BU	1970	58	167
1GS	1195	40	147	BUF	1970	57	163
5RU	1200	18	120	4LA	1975	85	163
6CB	1215	41	137	4SH	2000	90	170
5VA	1260	20	125	7AG	2090	72	157
5SI	1273	24	123	7DI	2090	76	168
1WE	1280	24	135	7MT	2150	64	165
2ST	1280	59	154	4RU	2200	107	165
SCU	1298	21	118	4KU	2210	88	168
1LS	1300	27	120	7BP	2255	122	169
3BR	1310	66	155	BEH	2256	126	169
3FB	1310	64	156	GUE	2287	172	163
1MI	1320	49	146	7AL	2330	83	174
2ME	1320	50	147	SAE	2490	246	164
1AD	1325	21	129	5WJ	2536	145	178

Table S 1: List of all stations used in this study, along with altitude values for mean HSavg and mean dHS1.