

Supplementary material

Table S1. Original, homogenized and calibrated mass balance series for Nigardsbreen over the period 1962-2013. The ice divide from 2009/2013 was used for all DTMs. **A-distr**: re-calculation of winter and summer balance from contour method (planimeter) to profile method. **Basin**: re-calculation from glaciological to hydrological basin. **DTM**: re-calculated mass balance series with other DTM using the step approach. **Div**: recalculating the mass balance using the ice divide from 2009/2013. **Dens**: converting from snow depth to water equivalent based on a mathematical trend line/function.

	Original mass balance series								Homogenized mass balance series								Calibrated mass balance series								Homogenized with regard to					Calib.
Year	B _w	B _s	B _a	ΣB _a	ELA	AAR	DTM	Area	B _w	B _s	B _a	ΣB _a	ELA	AAR	DTM	Area	B _w	B _s	B _a	ΣB _a	ELA	AAR	DTM	Area	A-distr	Basin	DTM	Div.	Dens.	
1962	2.88	-0.63	2.25	2.25	1260	90	1964	42.19	2.11	0.17	2.27	2.27	1 295	92	1964	48.31	2.11	0.17	2.27	2.27	1295	92	1964	48.31	X	X		X		
1963	1.87	-2.09	-0.22	2.03	1550	71	1964	42.19	1.78	-1.96	-0.19	2.09	1 550	66	1964	48.31	1.78	-1.96	-0.19	2.09	1550	66	1964	48.31	X	X		X		
1964	2.13	-1.18	0.95	2.98	1400	85	1964	42.19	1.96	-1.19	0.76	2.85	1 460	81	1964	48.31	1.96	-1.19	0.76	2.85	1460	81	1964	48.31	X	X		X		
1965	2.29	-1.38	0.91	3.89	1395	85	1964	40.86	1.93	-1.17	0.76	3.61	1 410	87	1964	48.31	1.93	-1.17	0.76	3.61	1410	87	1964	48.31	X	X		X		
1966	1.76	-2.68	-0.92	2.97	1700	33	1964	40.86	1.74	-2.69	-0.95	2.66	1 695	30	1964	48.31	1.74	-2.69	-0.95	2.66	1695	30	1964	48.31	X	X		X		
1967	3.40	-1.24	2.16	5.13	1310	89	1964	40.86	2.98	-1.18	1.80	4.46	1 330	91	1964	48.31	2.98	-1.18	1.80	4.46	1330	91	1964	48.31	X	X		X		
1968	2.72	-2.50	0.22	5.35	1550	67	1964	47.03	2.49	-2.41	0.09	4.54	1 555	65	1964	48.31	2.49	-2.41	0.09	4.54	1555	65	1964	48.31	X			X		
1969	1.95	-3.26	-1.31	4.04	1850	3	1964	47.03	1.69	-3.14	-1.45	3.09	1 890	1	1974	48.10	1.69	-3.14	-1.45	3.09	1890	1	1974	48.10	X		X	X	X	
1970	1.73	-2.29	-0.56	3.48	1650	42	1964	47.03	1.67	-2.30	-0.63	2.46	1 655	41	1974	48.10	1.67	-2.30	-0.63	2.46	1655	41	1974	48.10	X		X	X	X	
1971	2.11	-1.29	0.82	4.30	1400	87	1964	46.40	2.17	-1.31	0.85	3.32	1 425	85	1974	48.10	2.17	-1.31	0.85	3.32	1425	85	1974	48.10	X		X	X	X	
1972	1.88	-2.02	-0.14	4.16	1570	62	1964	46.56	1.79	-2.02	-0.23	3.09	1 595	57	1974	48.10	1.79	-2.02	-0.23	3.09	1595	57	1974	48.10	X		X	X	X	
1973	2.40	-1.30	1.10	5.26	1410	86	1964	46.61	2.47	-1.41	1.06	4.15	1 405	87	1974	48.10	2.47	-1.41	1.06	4.15	1405	87	1974	48.10	X		X	X	X	
1974	2.06	-1.58	0.48	5.74	1490	77	1974	47.21	1.93	-1.72	0.21	4.36	1 540	68	1974	48.10	1.93	-1.72	0.21	4.36	1540	68	1974	48.10	X			X	X	
1975	2.50	-2.23	0.27	6.01	1450	82	1974	48.20	2.43	-2.41	0.02	4.38	1 520	72	1974	48.10	2.43	-2.41	0.02	4.38	1520	72	1974	48.10	X			X	X	
1976	2.88	-2.48	0.40	6.41	1540	67	1974	48.20	2.87	-2.44	0.44	4.82	1 530	70	1974	48.10	2.87	-2.44	0.44	4.82	1530	70	1974	48.10	X			X		
1977	1.52	-2.29	-0.77	5.64	1650	42	1974	48.20	1.49	-2.33	-0.83	3.98	1 670	37	1974	48.10	1.49	-2.33	-0.83	3.98	1670	37	1974	48.10	X			X	X	
1978	2.12	-2.25	-0.13	5.51	1590	57	1974	48.20	2.00	-2.24	-0.24	3.74	1 610	53	1974	48.10	2.00	-2.24	-0.24	3.74	1610	53	1974	48.10	X			X		
1979	2.75	-2.04	0.71	6.22	1500	75	1974	48.20	2.43	-2.10	0.34	4.08	1 560	64	1984	48.86	2.43	-2.10	0.34	4.08	1560	64	1984	48.86	X		X	X	X	
1980	1.77	-2.99	-1.22	5.00	1730	22	1974	48.20	1.76	-3.03	-1.28	2.80	1 735	22	1984	48.86	1.76	-3.03	-1.28	2.80	1735	22	1984	48.86	X		X	X		
1981	2.19	-1.88	0.31	5.31	1560	63	1974	48.20	2.19	-1.98	0.21	3.02	1 150	66	1984	48.86	2.19	-1.98	0.21	3.02	1150	66	1984	48.86	X		X	X	X	
1982	1.94	-2.36	-0.42	4.89	1600	55	1974	48.20	1.88	-2.30	-0.42	2.60	1 615	52	1984	48.86	1.88	-2.30	-0.42	2.60	1615	52	1984	48.86	X		X	X	X	
1983	3.02	-1.93	1.09	5.98	1445	83	1974	48.20	2.94	-2.03	0.91	3.51	1 455	81	1984	48.86	2.94	-2.03	0.91	3.51	1455	81	1984	48.86	X		X	X	X	
1984	2.49	-2.15	0.34	6.32	1500	75	1974	48.20	2.49	-2.30	0.19	3.70	1 530	70	1984	48.86	2.49	-2.30	0.19	3.70	1530	70	1984	48.86	X		X	X		
1985	1.77	-1.87	-0.10	6.22	1590	57	1974	48.20	1.74	-2.21	-0.47	3.23	1 655	42	1984	48.86	1.60	-2.39	-0.79	2.91	1690	32	1984	48.86	X		X	X	X	X
1986	1.61	-1.71	-0.10	6.12	1590	57	1974	48.20	1.49	-1.78	-0.29	2.94	1 615	52	1984	48.86	1.34	-1.95	-0.62	2.29	1645	44	1984	48.86	X		X	X	X	X
1987	2.73	-1.25	1.48	7.60	1350	90	1974	48.20	2.68	-1.46	1.22	4.16	1 400	87	1984	48.86	2.47	-1.57	0.90	3.19	1460	80	1984	48.86	X		X	X	X	X
1988	2.24	-3.13	-0.89	6.71	1660	39	1984	47.82	2.21	-3.18	-0.97	3.19	1 680	35	1984	48.86	2.08	-3.37	-1.30	1.89	1720	25	1984	48.86	X			X	X	X
1989	4.05	-0.85	3.20	9.91	1175	94	1984	47.82	3.62	-0.87	2.75	5.93	1 220	93	1984	48.86	3.36	-0.93	2.42	4.32	1280	92	1984	48.86				X	X	X
1990	3.52	-1.75	1.77	11.68	1430	84	1984	47.82	3.55	-2.10	1.44	7.38	1 410	86	1984	48.86	3.34	-2.22	1.12	5.44	1450	82	1984	48.86				X	X	X
1991	1.95	-1.75	0.20	11.88	1520	71	1984	47.82	1.95	-1.87	0.08	7.46	1 530	70	1984	48.86	1.79	-2.03	-0.24	5.20	1585	59	1984	48.86				X	X	X
1992	3.16	-1.56	1.60	13.48	1360	89	1984	47.82	2.88	-1.43	1.46	8.92	1 360	89	1984	48.86	2.66	-1.53	1.13	6.33	1410	86	1984	48.86				X	X	X
1993	3.13	-1.28	1.85	15.33	1300	92	1984	47.82	2.74	-1.30	1.45	10.36	1 375	89	1984	48.86	2.52	-1.40	1.12	7.45	1410	86	1984	48.86				X	X	X
1994	2.28	-1.72	0.56	15.89	1400	87	1984	47.82	2.19	-1.71	0.48	10.84	1 425	85	1984	48.86	2.01	-1.85	0.15	7.60	1500	75	1984	48.86				X	X	X
1995	3.16	-1.97	1.19	17.08	1320	91	1984	47.82	3.05	-1.91	1.14	11.98	1 325	91	1984	48.86	2.85	-2.03	0.82	8.42	1360	90	1984	48.86				X	X	X
1996	1.40	-1.81	-0.41	16.67	1660	39	1984	47.82	1.39	-1.81	-0.42	11.56	1 630	48	1984	48.86	1.25	-1.99	-0.74	7.68	1690	32	1984	48.86				X		X
1997	2.66	-2.62	0.04	16.71	1500	75	1984	47.82	2.60	-2.81	-0.21	11.35	1 620	51	2009	47.93	2.45	-2.98	-0.53	7.15	1690	32	2009	47.93			X	X	X	X
1998	2.50	-1.53	0.97	17.68	1350	90	1984	47.82	2.48	-1.70	0.78	12.14	1 415	86	2009	47.93	2.29	-1.83	0.46	7.61	1470	80	2009	47.93			X	X	X	X
1999	2.38	-2.21	0.17	17.85	1470	79	1984	47.82	2.38	-2.23	0.14	12.28	1 460	81	2009	47.93	2.21	-2.39	-0.18	7.43	1575	62	2009	47.93			X	X	X	X
2000	3.38	-1.66	1.72	19.57	1250	93	1984	47.82	3.34	-1.75	1.59	13.87	1 295	92	2009	47.93	3.13	-1.86	1.27	8.70	1325	91	2009	47.93			X	X	X	X
2001	1.75	-1.97	-0.22	19.35	1560	64	1984	47.82	1.84	-1.92	-0.08	13.80	1 515	73	2009	47.93	1.69	-2.09	-0.40	8.30	1600	56	2009	47.93			X	X	X	X
2002	2.41	-3.30	-0.89	18.46	1715	25	1984	47.82	2.38	-3.28	-0.90	12.89	1 730	23	2009	47.93	2.24	-3.47	-1.23	7.07	1805	10	2009	47.93			X	X	X	X
2003	1.56	-2.72	-1.16	17.30	>1960	0	1984	47.82	1.60	-2.80	-1.20	11.70	>1957	0	2009	47.93	1.49	-3.01	-1.52	5.55	>1957	0	2009	47.93			X	X	X	X
2004	1.97	-2.01	-0.04	17.26	1530	70	1984	47.82	1.99	-2.07	-0.07	11.62	1 550	67	2009	47.93	1.83	-2.23	-0.40	5.15	1610	54	2009	47.93			X	X	X	X
2005	2.80	-1.70	1.10	18.36	1395	87	1984	47.82	2.92	-1.71	1.21	12.84	1 390	88	2009	47.93	2.72	-1.83	0.89	6.04	1430	85	2009	47.93			X	X	X	X
2006	1.75	-3.15	-1.40	16.96	1850	4	1984	47.82	1.74	-3.15	-1.40	11.43	1 830	7	2009	47.93	1.63	-3.36	-1.73	4.31	>1957	0	2009	47.93			X	X		X
2007	3.09	-2.05	1.05	18.01	1320	91	1984	47.82	3.05	-2.07	0.98	12.42	1 320	91	2009	47.93	2.86	-2.20	0.66	4.97	1365	90	2009	47.93			X	X		X
2008	3.01	-1.92																												

