Brief communication: Firn data compilation reveals the evolution of the firn air content on the Greenland ice sheet

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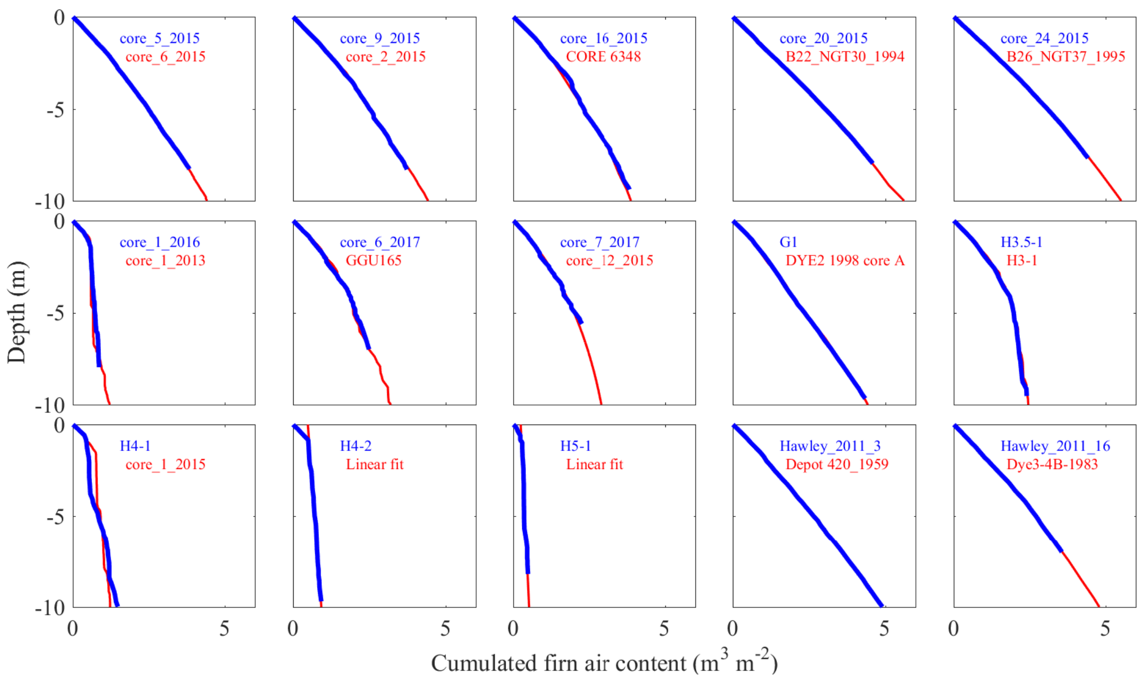
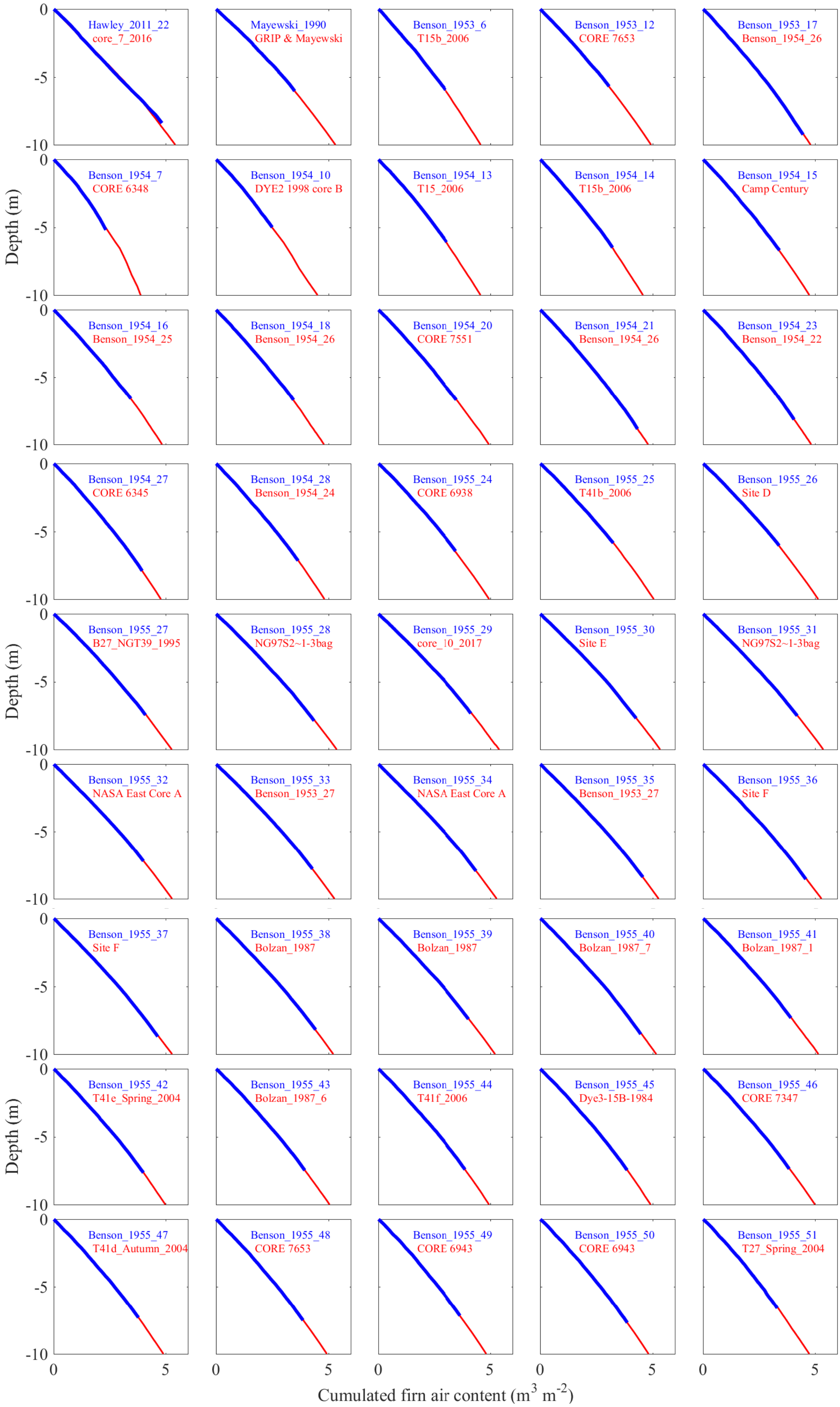


Figure S1. Extrapolation of FAC to 10 m using the lower section of the existing 10 m-long FAC profile that has the lowest Root Mean Squared Difference with the shallow FAC profile.



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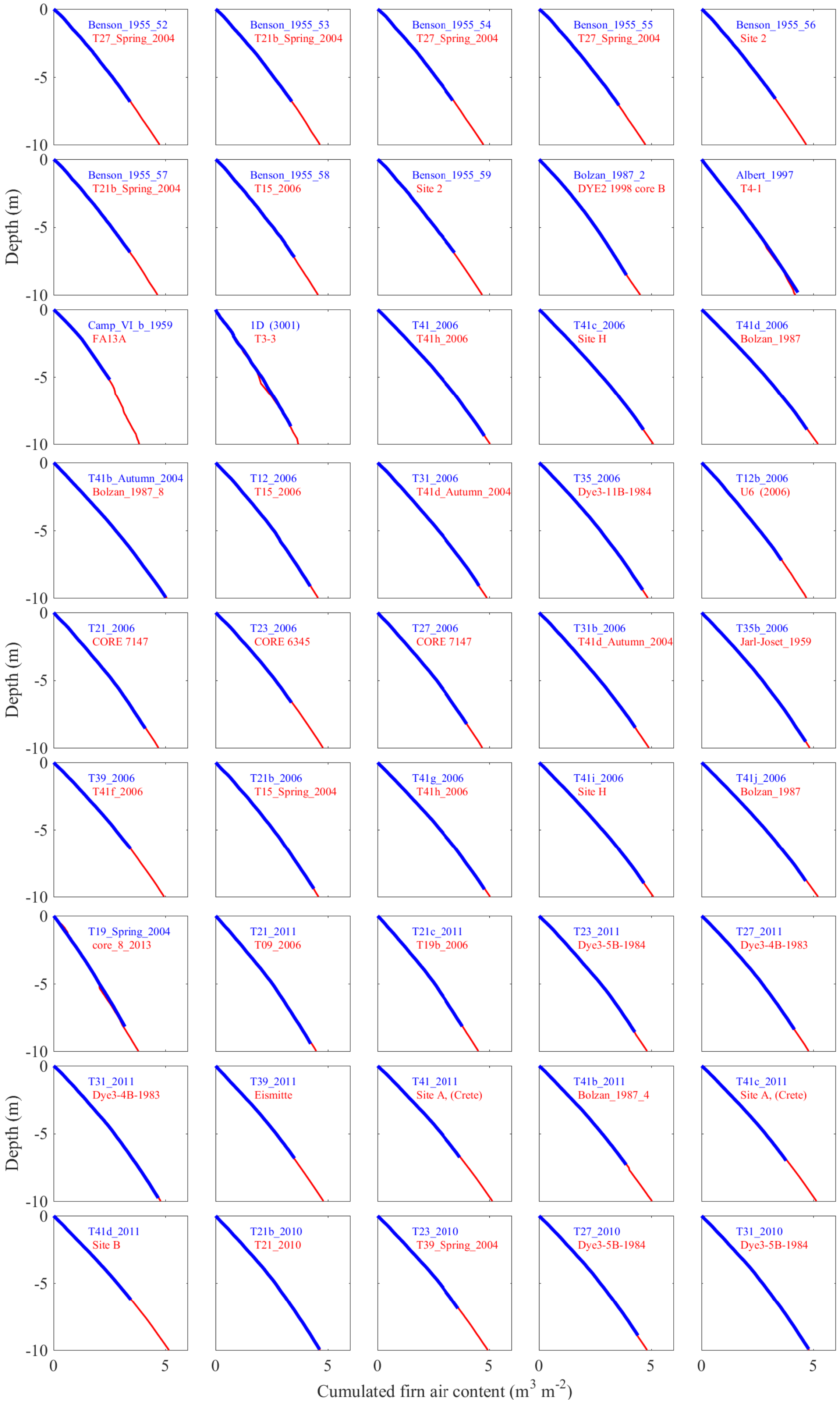

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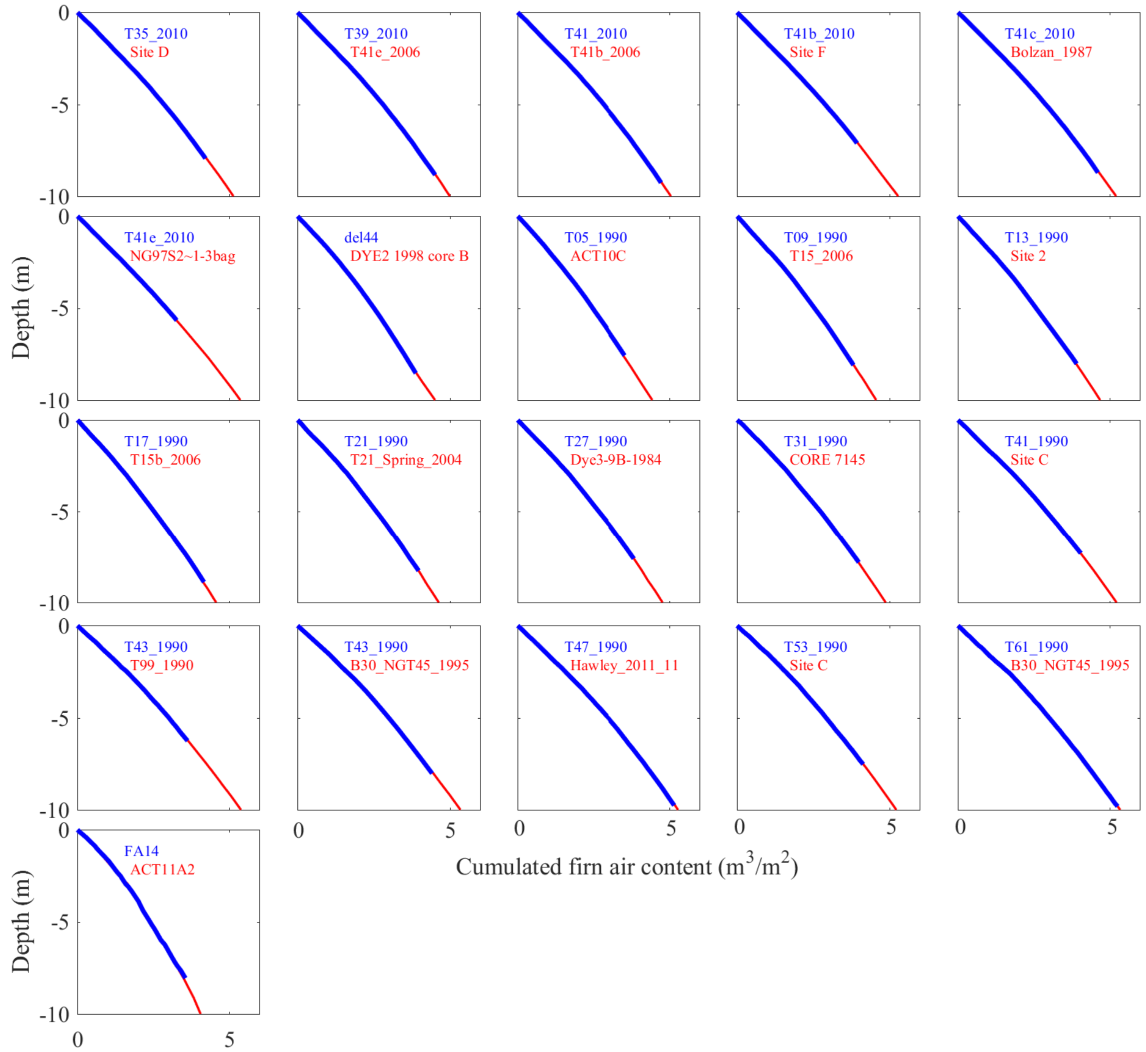

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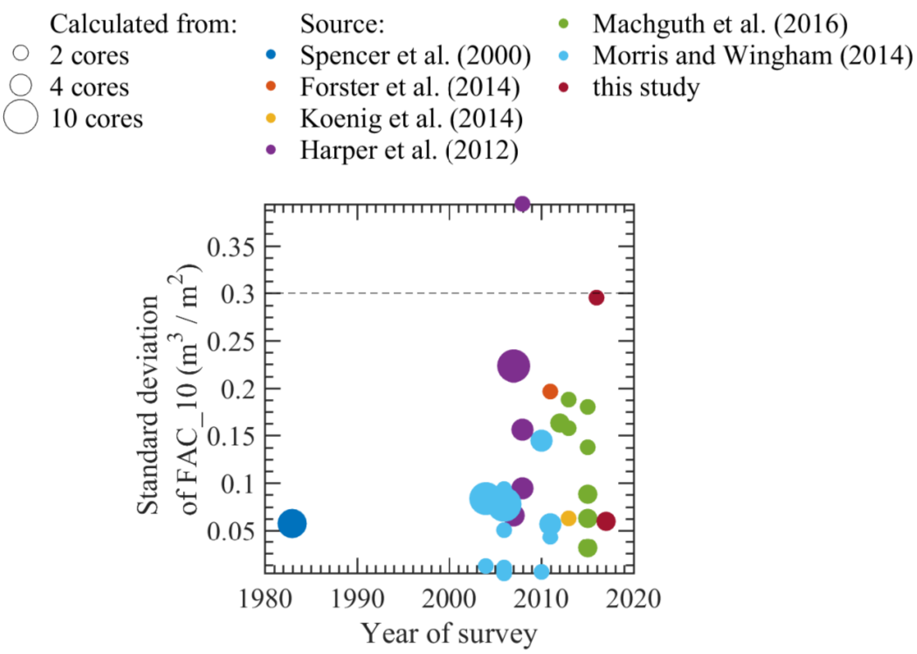

Figure S2. Standard deviation of FAC measurements located within 1 km. Dashed line indicate 0.3 m^3 m^{-2}, value used to describe the uncertainty applying on any FAC_{10} measurement.

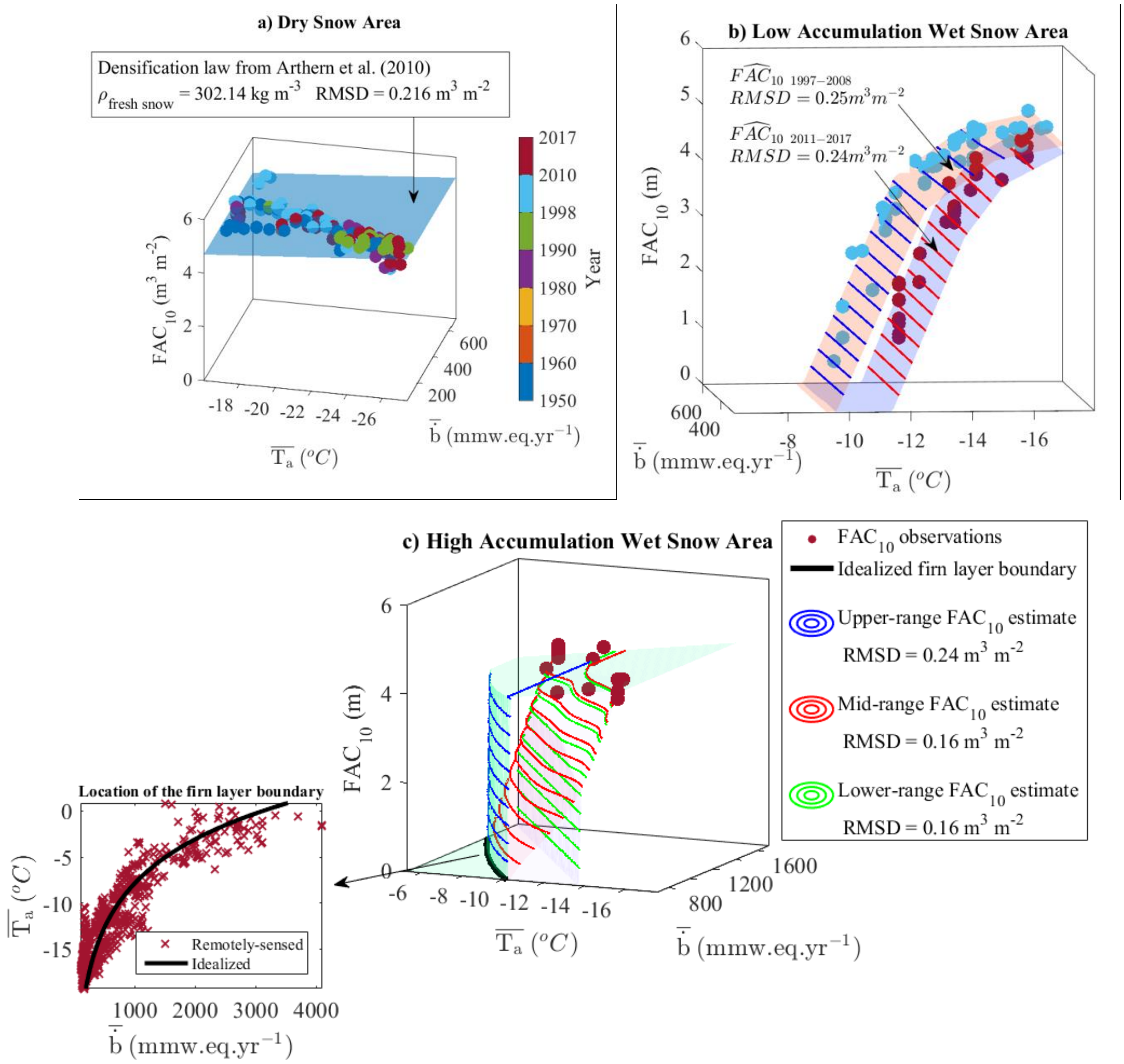

Figure S3. Empirical functions of $\bar{\dot{b}}$ and $\overline{T_a}$, fitted to the FAC_{10} observations and used to predict FAC_{10} over the entire frin area. a) Over the DSA, the firn densification function from Arthern et al. (2010) (blue plane) was used with a fresh snow density of 302.15 kg m^{-3}. b) In the LAWSA two functions linearly increasing with $\bar{\dot{b}}$ and piecewise linearly decreasing with $\overline{T_a}$ (two slope breaks at 1/3 and 2/3 of the $\overline{T_a}$ range covered by the data) were fitted separately to the FAC_{10} observations for 1997-2008 and 2011-2017 periods. c) In the HAWSA we use the linear dependence of FAC_{10} on $\overline{T_a}$ (Section 2.5.3.) as maximum value. The upper-range FAC_{10} estimate (blue contour lines) follows that linear function of $\overline{T_a}$ until it reaches the idealized boundary of the firn area (black line, exponential fit to the remotely-sensed location of the firn line in the ($\bar{\dot{b}}$, $\overline{T_a}$) space, inset). The mid-range estimate links the measurements and the idealized boundary of the firn area using a smoothed bilinear function. The lower-range estimate follows the mid-range estimate in the lowest temperatures but is set to zero for any location where temperature exceeds the FAC_{10} measurements by 1 ^{o}C.

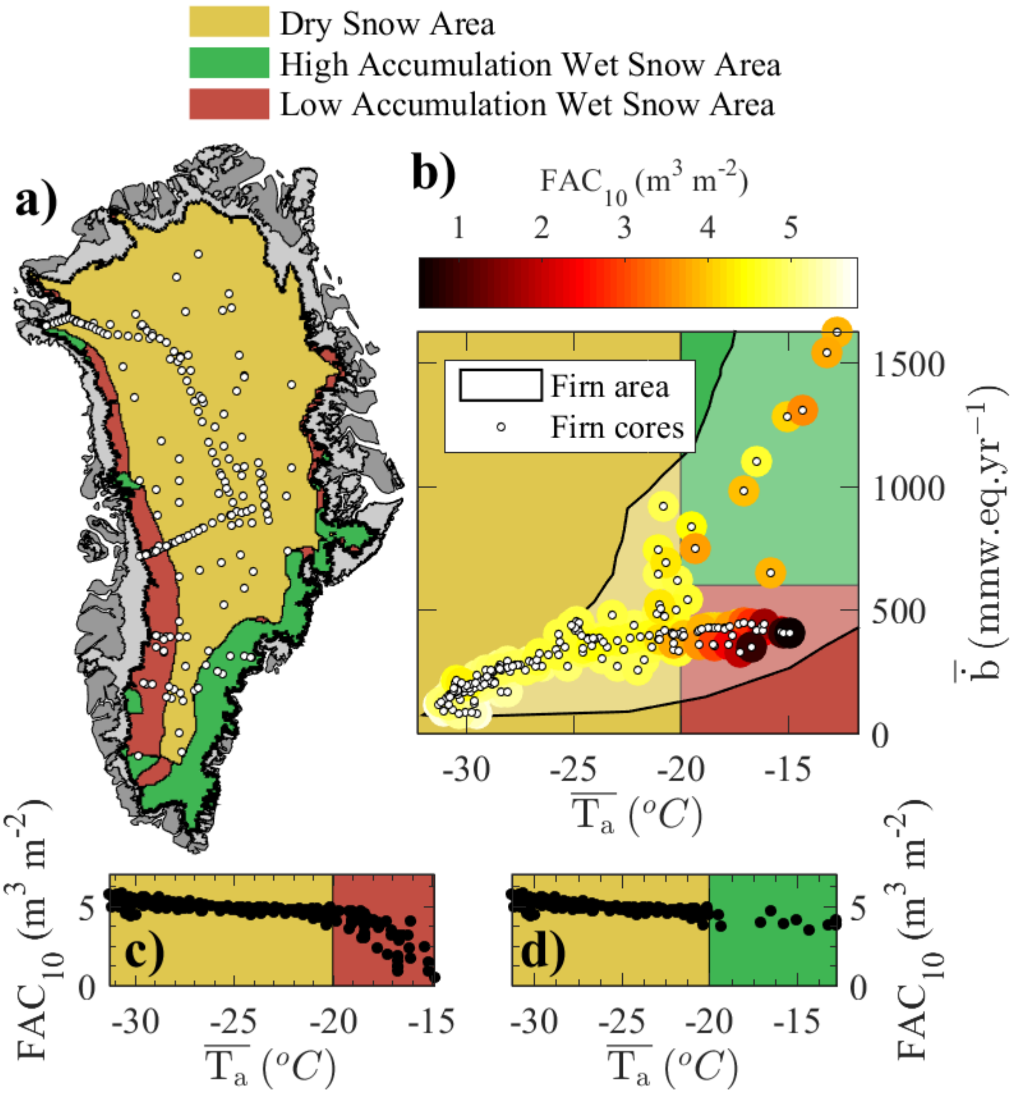

Figure S4. Repetition of the procedure with $\bar{\dot{b}}$ and $\overline{T_a}$ taken as 1979-2014 average snowfall and surface temperature from MAR regional climate model (Fettweis et al. 2017). Threshold temperature between the dry snow area and the wet snow areas is -20°C given the different definition of $\overline{T_a}$. a) Geographical distribution of the FAC_{10} dataset. B) Distribution of the dataset in the accumulation-temperature space ($\bar{\dot{b}}$ and $\overline{T_a}$). FAC_{10} value is indicated by a coloured disk around each point. c) Temperature dependency of FAC_{10} in the DSA and LAWSA d) Temperature dependency of FAC_{10} in the DSA and HAWSA.

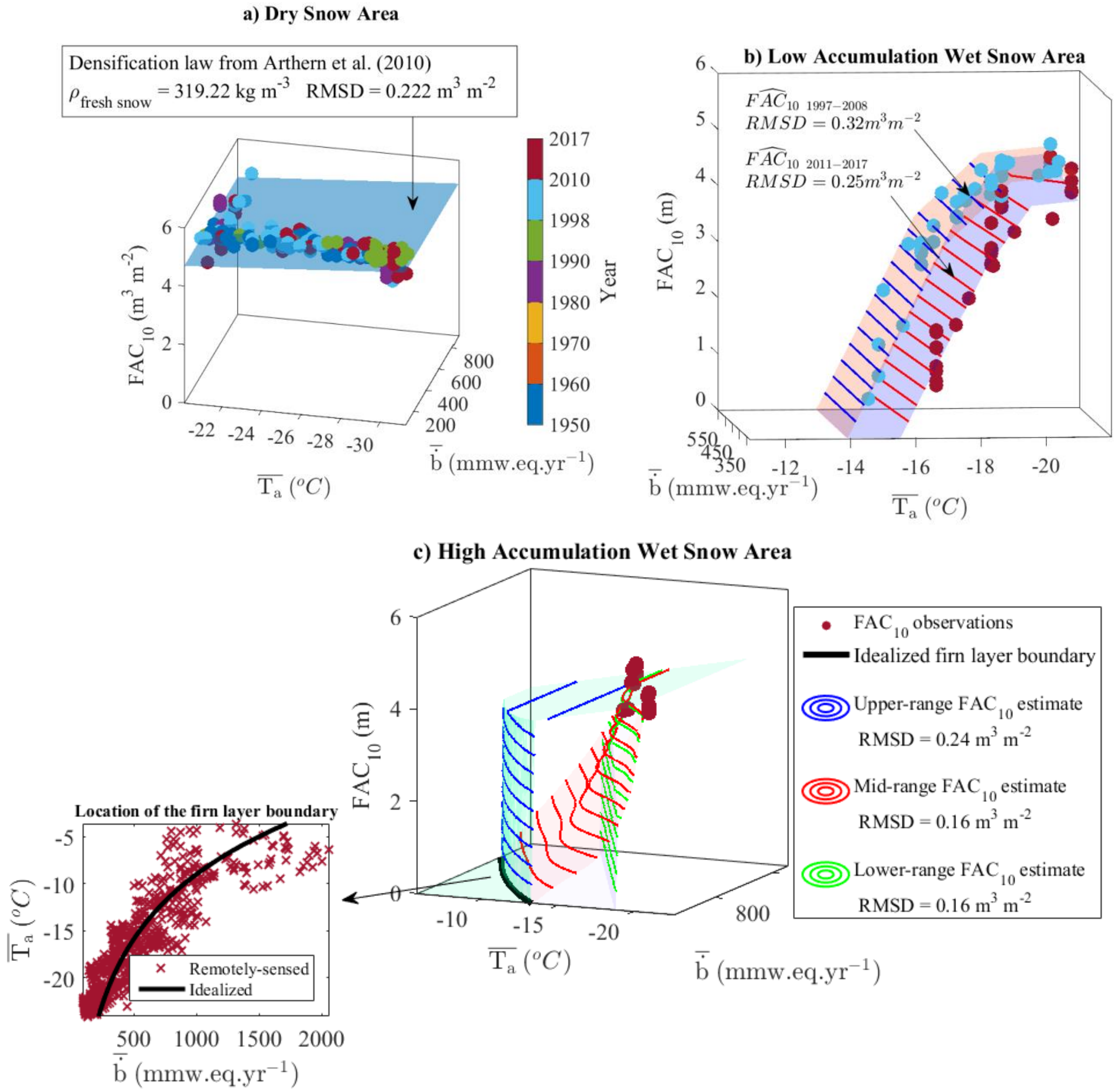

Figure S5. Construction of the empirical functions used for the mapping of FAC_{10}, similar to Figure S3 but using $\bar{\dot{b}}$ and $\overline{T_a}$ from MAR (Fettweis et al. 2017).

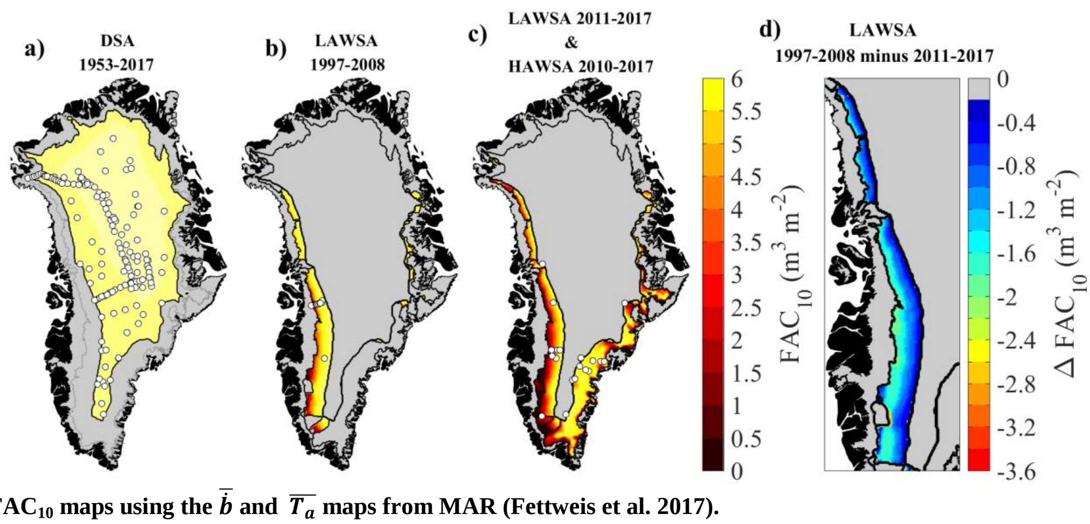

Figure S6. FAC_{10} maps using the $\bar{\dot{b}}$ and $\overline{T_a}$ maps from MAR (Fettweis et al. 2017).

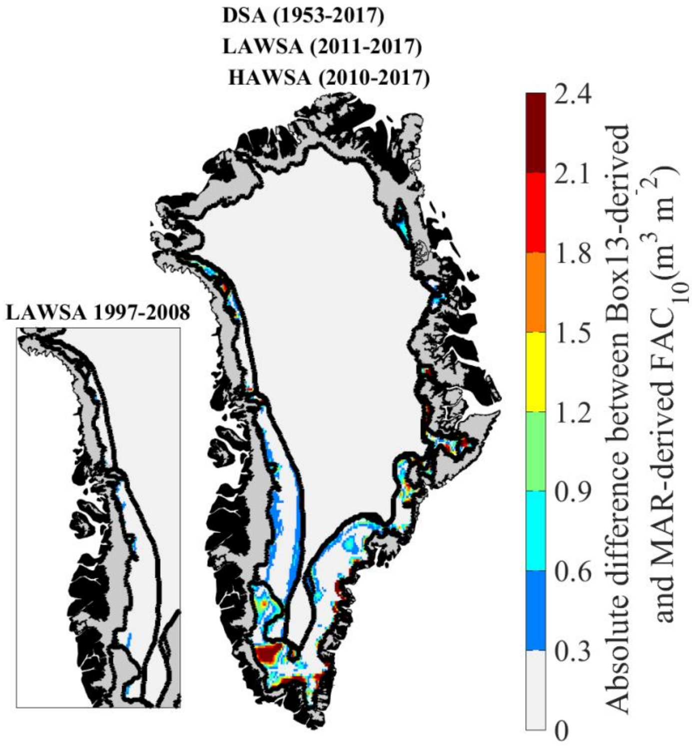

Figure S7. Difference between the FAC_{10} maps obtained using $\bar{\dot{b}}$ and $\overline{T_a}$ from Box (2013) and Box et al. (2013) and the maps obtained using $\bar{\dot{b}}$ and $\overline{T_a}$ from MAR (Fettweis et al. 2017).

Table S1. List of the cores used in this study, sorted by alphabetical order of the source, along with their calculated FAC_{10}. Long-term average air temperature ($\overline{T_a}$) and accumulation ($\bar{b}$) were taken from Box et al. (2013) and Box (2013).

Year	Name	Latitude (°N)	Longitude (°E)	$\overline{T_a}$ (°C)	$\bar{b}$ (mm w.eq. yr^{-1})	Length of core (m)	FAC_{10} (m^3 m^{-2})	Source
1997	Albert_1997	72.58	-38.50	-30.2	204	9.8	4.4	Albert, M., and Shultz, E.: Snow and firn properties and air–snow transport processes at Summit, Greenland, Atmos. Environ., 36, 2789-2797, 2002.
1987	Site A	70.63	-35.82	-28.0	293	109.0	5.1	Alley, R.: Transformations in Polar Firn, Ph.D. Thesis, University of Wisconsin, Madison, WI, USA, 1987.
1954	Eismitte	71.75	-40.75	-27.8	272	15.0	4.8	Bader, H.: Sorge's law of densication of snow on high polar glaciers, Journal of Glaciology , 2, 15, 319-411, 1954.
2009	Baker_2009	77.45	-51.06	-28.6	210	79.8	5.2	Baker, I.: Density and permeability measurements with depth for the NEEM 2009S2 firn core, ACADIS Gateway, doi:10.18739/A2Q88G, 2012.
1954	Benson_1954_12	76.72	-65.39	-19.7	543	14.4	4.7	Benson, C. S.: Stratigraphic Studies in the Snow and Firn of the Greenland Ice Sheet, U.S. Army Snow, Ice and Permafrost Research Establishment, 1962.
1954	Benson_1954_14	76.89	-64.40	-21.0	379	6.5	4.6	
1954	Benson_1954_15	76.96	-63.90	-21.4	347	6.7	4.8	
1954	Benson_1954_16	77.05	-63.39	-21.7	296	6.6	4.9	
1954	Benson_1954_18	77.14	-62.89	-22.0	259	6.7	4.8	
1954	Benson_1954_19	77.24	-62.33	-22.9	270	16.8	4.9	
1954	Benson_1954_20	77.24	-61.67	-23.7	306	6.7	4.9	
1954	Benson_1954_21	77.22	-61.02	-24.3	382	8.9	4.8	
1954	Benson_1954_22	77.18	-60.39	-24.9	417	15.2	4.8	
1954	Benson_1954_23	77.18	-59.74	-24.9	453	8.2	4.8	
1954	Benson_1954_24	77.15	-59.09	-25.1	436	10.2	4.8	
1954	Benson_1954_25	77.13	-58.45	-25.0	435	10.3	4.8	
1954	Benson_1954_26	77.09	-57.82	-24.7	446	14.2	4.8	
1954	Benson_1954_27	77.06	-57.20	-24.9	429	7.9	4.8	
1954	Benson_1954_28	77.03	-56.56	-24.8	411	7.2	4.8	
1953	Benson_1953_6	76.73	-65.42	-20.2	500	6.0	4.6	
1953	Benson_1953_12	77.24	-62.33	-22.9	270	5.7	4.9	
1953	Benson_1953_17	77.15	-59.10	-25.1	436	9.3	4.8	

1953	Benson_1953_27	77.30	-49.94	-29.0	206	10.8	5.3
1955	Benson_1955_24	77.03	-54.52	-25.8	339	6.5	5.0
1955	Benson_1955_25	77.05	-52.92	-26.9	287	5.9	5.1
1955	Benson_1955_26	77.05	-51.33	-27.9	250	6.1	5.2
1955	Benson_1955_27	77.07	-49.60	-28.9	217	7.5	5.2
1955	Benson_1955_28	77.07	-48.02	-29.6	182	7.9	5.3
1955	Benson_1955_29	76.97	-46.98	-30.1	170	7.3	5.4
1955	Benson_1955_30	76.64	-45.70	-30.4	166	7.7	5.3
1955	Benson_1955_31	76.32	-45.10	-30.5	171	7.5	5.4
1955	Benson_1955_32	75.99	-44.58	-30.5	175	7.2	5.3
1955	Benson_1955_33	75.64	-43.95	-30.4	175	7.8	5.3
1955	Benson_1955_34	75.30	-43.42	-30.4	177	7.9	5.3
1955	Benson_1955_35	74.94	-42.97	-30.3	179	8.4	5.3
1955	Benson_1955_36	74.59	-42.55	-30.0	182	8.6	5.3
1955	Benson_1955_37	74.22	-42.17	-29.9	185	8.7	5.3
1955	Benson_1955_38	74.87	-41.80	-30.8	149	8.2	5.2
1955	Benson_1955_39	73.52	-41.42	-29.3	188	7.4	5.2
1955	Benson_1955_40	73.17	-41.10	-29.2	199	8.5	5.1
1955	Benson_1955_41	72.82	-40.75	-29.1	219	7.3	5.1
1955	Benson_1955_42	72.47	-40.33	-29.0	232	7.7	5.0
1955	Benson_1955_43	72.12	-39.93	-28.9	241	7.5	5.1
1955	Benson_1955_44	71.77	-39.60	-28.8	249	7.4	5.0
1955	Benson_1955_45	71.43	-39.33	-28.3	258	7.5	4.9
1955	Benson_1955_46	71.08	-38.97	-28.0	266	7.4	5.0
1955	Benson_1955_47	71.00	-39.67	-27.5	277	7.3	4.9
1955	Benson_1955_48	70.91	-40.63	-26.7	296	7.5	4.9
1955	Benson_1955_49	70.78	-41.63	-25.7	318	7.2	4.8
1955	Benson_1955_50	70.63	-42.62	-24.6	344	7.7	4.8
1955	Benson_1955_51	70.46	-43.58	-23.6	369	6.6	4.7
1955	Benson_1955_52	70.30	-44.55	-22.4	388	6.8	4.7
1955	Benson_1955_53	70.25	-44.97	-21.9	391	6.8	4.7

1955	Benson_1955_54	70.18	-45.37	-21.5	398	6.8	4.7	
1955	Benson_1955_55	70.11	-45.73	-21.0	402	7.1	4.8	
1955	Benson_1955_56	70.04	-46.13	-20.4	401	6.6	4.7	
1955	Benson_1955_57	69.98	-46.50	-19.9	411	6.9	4.7	
1955	Benson_1955_58	69.92	-46.93	-19.1	418	7.2	4.6	
1955	Benson_1955_59	69.87	-47.30	-18.6	428	6.9	4.7	
1987	Bolzan_1987	77.98	-37.70	-30.3	79	16.6	5.2	Bolzan, J. F., and Strobel, M.: Oxygen isotope data from snowpit at GISP2 Site 15., PANGAEA, doi:10.1594/PANGAEA.55511, 1999.
1987	Bolzan_1987_1	72.21	-35.67	-29.8	199	14.8	5.2	
1987	Bolzan_1987_2	72.29	-37.92	-30.4	215	8.5	4.5	
1987	Bolzan_1987_3	71.60	-38.14	-29.5	237	16.9	5.1	
1987	Bolzan_1987_4	71.92	-35.96	-29.6	207	11.0	5.0	
1987	Bolzan_1987_5	72.64	-35.94	-30.6	186	14.2	5.1	
1987	Bolzan_1987_6	72.35	-40.21	-29.0	235	16.5	5.1	
1987	Bolzan_1987_7	72.89	-39.16	-30.0	193	16.2	5.2	
1987	Bolzan_1987_8	71.93	-39.84	-28.7	249	16.5	5.1	
2011	B262011	77.25	-49.21	-29.4	193	29.7	5.4	Buchardt, S. L., Clausen, H. B., Vinther, B. M., and Dahl-Jensen, D.: Investigating the past and recent delta 18O-accumulation relationship seen in Greenland ice cores, Clim. Past, 8, 6, 2053-2059, 2012.
2011	Camp Century 2010	77.85	-52.02	-28.3	168	40.7	5.3	
2010	CC_2010_	77.18	-60.50	-24.8	431	30.3	5.0	
2007	TraverseSite1	76.45	-44.77	-30.7	157	70.7	5.4	
2001	NGRIP2001S4	75.10	-42.30	-30.7	157	100.1	5.5	
2001	NGRIP2001S5	75.10	-42.30	-30.7	157	100.1	5.5	
1997	NG97S2~1-3bag	75.10	-42.30	-30.7	157	141.5	5.4	
1987	del44	72.29	-35.92	-29.9	197	8.5	4.5	
1988	Site A, (Crete)	71.12	-37.32	-29.1	256	128.6	5.2	Clausen, H., Gundestrup, N. S., Johnsen, S. J., Binchadler, R., and Zwally, J.: Glaciological investigations in the Crete area, Central Greenland: a search for a new deep-drilling Site, Ann. Glaciol., 10, 10-15, 1988.
1988	Site B	70.65	-37.48	-28.4	279	105.6	5.2	
1988	Site C	70.68	-38.79	-27.7	279	24.8	5.2	
1988	Site D	70.64	-39.62	-27.0	291	100.1	5.1	
1988	Site E	71.76	-35.85	-29.4	212	77.8	5.3	
1988	Site F	71.49	-35.90	-29.2	221	25.7	5.3	
1988	Site G	71.15	-35.84	-28.8	239	70.8	5.2	
1988	Site H	70.87	-35.84	-28.5	267	26.2	5.1	

2017	Camp Century 2017	77.17	-61.13	-24.3	382	62.3	5.0	Colgan, W., Pedersen, A., Binder, D., Machguth, H., Abermann, J., and Jayred, M.: Initial field activities of the Camp Century Climate Monitoring Programme in Greenland. Geological Survey of Denmark and Greenland Bulletin, Geol. Surv. Denmark Greenland Bull., 41, 75-78, 2018.
1990	T05_1990	69.85	-47.25	-18.7	425	7.6	4.5	Fischer, H., Wagenbach, D., Laternser, M., and Haeberli, W.: Glacio-meteorological and isotopic studies along the EGIG line, central Greenland., J. of Glaciol., 41, 139, 515-527, 1995.
1990	T09_1990	70.02	-46.31	-20.1	402	8.1	4.6	
1990	T13_1990	70.23	-45.02	-21.9	391	8.0	4.7	
1990	T17_1990	70.37	-44.10	-23.0	377	8.9	4.6	
1990	T21_1990	70.54	-43.02	-24.2	357	8.3	4.6	
1990	T27_1990	70.78	-41.54	-25.7	318	7.6	4.8	
1990	T31_1990	70.91	-40.64	-26.7	296	7.8	4.9	
1990	T41_1990	71.08	-37.92	-28.8	258	7.3	5.2	
1990	T43_1990	71.12	-37.32	-29.1	256	6.3	5.4	
1990	T43_1990	71.12	-37.32	-29.1	256	8.0	5.3	
1990	T47_1990	71.20	-35.95	-28.9	238	9.8	5.3	
1990	T53_1990	71.35	-33.48	-26.7	273	7.5	5.2	
1990	T61_1990	72.23	-32.33	-27.2	254	9.8	5.3	
1990	T99_1990	72.58	-37.63	-30.5	200	13.7	5.4	
2011	ACT11A2	66.18	-39.02	-12.7	1626	10.1	4.1	Forster, R. R., Box, J. E., van den Broeke, M. R., Miège, C., Burgess, E. W., Angelen, J. H., . . . McConnell, J. R.: Extensive liquid meltwater storage in firn within the Greenland ice sheet., Nat. Geosci., 7, 95-19, doi:10.1038/NGEO2043, 2014.
2011	ACT11A	66.18	-39.08	-13.2	1542	25.0	3.8	
2011	ACT11B	66.22	-39.57	-14.3	1310	60.9	3.5	
2011	ACT11C	66.29	-40.75	-17.0	983	61.4	4.0	
2011	ACT11D	66.48	-46.31	-18.4	355	59.4	3.8	
2008	GGU163	69.73	-48.19	-16.7	445	10.5	2.8	Harper, J., Humphrey, N., Pfeffer, W. T., Brown, J., and Fettweis, X.: Greenland ice-sheet contribution to sea-level rise buffered by meltwater storage in firn, Nature, 491, 240-243, doi:doi:10.1038/nature11566, 2012.
2008	GGU165	69.72	-48.27	-16.2	431	10.3	3.2	
2008	H1-1	69.74	-48.24	-16.7	445	11.1	3.2	
2008	H1-15	69.74	-48.24	-16.7	445	10.4	3.1	
2008	H1-30	69.74	-48.24	-16.7	445	10.3	3.0	
2008	H2-1	69.71	-48.35	-16.1	444	10.3	1.7	
2008	H3-1	69.69	-48.50	-15.4	413	10.3	2.5	
2008	H3.5-1	69.67	-48.59	-15.4	413	9.5	2.4	

2008	H4-1	69.66	-48.69	-15.2	406	10.0	1.5	
2008	H4-2	69.66	-48.69	-15.2	406	9.7	0.9	
2008	H5-1	69.64	-48.82	-14.9	407	8.2	0.5	
2008	T1-2	69.74	-48.06	-17.1	448	10.5	3.5	
2007	G1	69.88	-47.01	-19.0	420	9.7	4.5	
2007	G2	69.88	-47.01	-19.0	420	10.3	4.2	
2007	G3	69.88	-47.01	-19.0	420	10.4	4.7	
2007	G4	69.88	-47.01	-19.0	420	10.3	4.1	
2007	G5	69.88	-47.01	-19.0	420	10.1	4.5	
2007	G6	69.88	-47.01	-19.0	420	10.4	4.4	
2007	G7	69.88	-47.01	-19.0	420	10.2	4.7	
2007	G8	69.88	-47.01	-19.0	420	10.5	4.6	
2007	G9	69.88	-47.01	-19.0	420	10.4	4.6	
2007	SW-1	69.80	-47.57	-17.9	424	10.4	4.1	
2007	SW-2	69.80	-47.57	-17.9	424	10.2	4.0	
2007	SW-3	69.81	-47.54	-17.9	424	10.3	4.0	
2007	SW-4	69.79	-47.61	-17.9	426	10.2	4.1	
2007	T1-1	69.74	-48.06	-17.1	448	10.5	3.2	
2007	T2-1	69.76	-47.88	-17.3	443	10.5	4.1	
2007	T3-1	69.78	-47.67	-17.7	431	10.0	4.0	
2007	T3-2	69.78	-47.67	-17.7	431	10.4	3.7	
2007	T3-3	69.78	-47.67	-17.7	431	10.0	3.7	
2007	T4-1	69.82	-47.45	-18.2	425	10.6	4.2	
2007	T5-1	69.85	-47.27	-18.4	427	10.2	4.5	
2011	Hawley_2011	73.34	-39.72	-29.8	169	10.1	5.4	Hawley, R. L., Courville, Z. R., Kehrl, L., Lutz, E., Osteberg, E., Overly, T. B., and Wong, G.: Recent accumulation variability in northwest Greenland from ground-penetrating radar and shallow cores along the Greenland Inland Traverse, J. Glaciol., 60, 220, 375-382, doi:10.3189/2014JoG13J141, 2014.
2011	Hawley_2011_2	74.02	-40.62	-30.4	156	10.4	5.5	
2011	Hawley_2011_3	74.42	-39.29	-30.8	116	10.0	4.9	
2011	Hawley_2011_10	76.50	-43.73	-31.2	128	10.5	5.0	
2011	Hawley_2011_11	76.50	-44.84	-30.7	154	10.2	5.3	
2011	Hawley_2011_16	77.26	-58.53	-25.7	400	7.0	4.8	

2011	Hawley_2011_19	77.37	-55.93	-26.6	324	10.5	4.7	
2011	Hawley_2011_22	77.45	-50.54	-28.8	200	8.4	5.6	
1993	U6 (2006)	65.29	-45.83	-19.9	393	11.5	4.7	Jezek, K. C.: Surface Elevation and Velocity Changes on the South Central Greenland Ice Sheet: 1980-2011 - Data Summary. BPRC Technical Report No. 2012-01, Byrd Polar Research Center, The Ohio State University, Columbus, Ohio, 2012.
1989	Site J 1989	66.87	-46.26	-18.4	354	206.6	4.2	Kameda, T., Narita, H., Shoji, H., Nishio, F., Fuji, Y., and Watanabe, O.: Melt features in ice cores from Site J, southern Greenland: some implication for summer climate since AD 1550, Ann. Glaciol., 21, 51-58, 1995.
2014	FA14	66.18	-39.04	-12.7	1626	8.1	4.1	Koenig, L. S., Miège, C., Forster, R. R., and Brucker, L.: Initial in situ measurements of perennial meltwater storage in the Greenland firn aquifer, Geophys. Res. Lett., 41, 81-85, doi:10.1002/2013GL058083, 2014.
2013	FA13A	66.18	-39.04	-12.7	1626	50.4	3.8	
2013	FA13B	66.18	-39.04	-12.7	1626	32.1	3.9	
1963	Camp Century	77.18	-61.17	-24.1	385	222.6	4.8	Kovacs, A., Weeks, W. F., and Michitti, F.: Variation of Some Mechanical Properties of Polar Snow, Camp Century, Greenland, CRREL Res. Rpt. 276, 1969.
1965	Site 2	76.98	-56.07	-24.6	397	282.5	4.7	Langway, C. C.: Stratigraphic analysis of a deep ice core from Greenland, CRREL Res. Rpt. 77, 1967.
2007	Albert_2007	72.58	-38.50	-30.2	204	86.9	5.0	Lomonaco, R., Albert, M., and Baker, I.: Microstructural evolution of fine-grained layers through the firn column at Summit, Greenland, J. Glaciol., 57, 204, 2011.
2015	core_1_2015	67.00	-47.02	-16.7	348	14.4	1.2	Machguth, H., MacFerrin, M., As, D. v., Box, J., Charalampidis, C., Colgan, W., . . . Mosley-Thompson, E.: Greenland meltwater storage in firn limited by near-surface ice formation, Nature Clim. Change, 6, 390-395, doi:10.1038/NCLIMATE2899, 2016.
2015	core_2_2015	66.99	-44.39	-21.0	380	15.6	4.4	
2015	core_3_2015	66.48	-42.50	-20.7	690	16.6	4.3	
2015	core_5_2015	66.48	-42.50	-20.7	690	8.3	4.4	
2015	core_6_2015	66.48	-42.50	-20.7	690	16.3	4.4	
2015	core_7_2015	66.00	-44.50	-21.0	519	16.4	4.3	
2015	core_9_2015	66.00	-44.50	-21.0	519	8.3	4.4	
2015	core_10_2015	66.00	-44.50	-21.0	519	16.5	4.3	
2015	core_11_2015	66.48	-46.29	-18.4	355	19.3	3.3	
2015	core_14_2015	69.88	-47.03	-19.0	420	17.3	4.2	

2015	core_16_2015	69.88	-47.03	-19.0	420	9.4	4.0	
2015	core_18_2015	75.63	-35.98	-30.6	94	15.3	5.4	
2015	core_20_2015	75.63	-35.98	-30.6	94	8.0	5.6	
2015	core_22_2015	72.58	-38.47	-30.3	203	15.8	5.4	
2015	core_24_2015	72.58	-38.47	-30.3	203	7.7	5.5	
2015	core_25_2015	72.58	-38.47	-30.3	203	15.9	5.4	
2013	core_1_2013	67.00	-47.02	-16.7	348	19.1	1.2	
2013	core_2_2013	67.00	-47.02	-16.7	348	15.9	1.0	
2013	core_3_2013	66.98	-46.63	-17.8	362	16.0	2.4	
2013	core_4_2013	66.98	-46.12	-18.5	358	16.3	3.0	
2013	core_5_2013	66.48	-46.28	-18.4	355	16.6	3.3	
2013	core_6_2013	66.47	-46.28	-18.4	355	16.5	3.0	
2013	core_7_2013	66.98	-45.75	-19.2	359	16.4	3.6	
2013	core_8_2013	66.98	-45.04	-20.3	363	16.3	3.8	
2013	core_9_2013	66.99	-44.39	-21.0	380	17.0	4.3	
2012	core_1_2012	67.00	-47.02	-16.7	348	10.7	1.8	
2012	core_2_2012	67.00	-47.02	-16.7	348	10.5	1.9	
2012	core_3_2012	67.00	-47.02	-16.7	348	10.2	1.6	
1984	Mayewski_1984	65.10	-44.87	-20.8	472	104.1	4.7	Mayewski, P., and Whitlow, S.: 2016. Snow Pit and Ice Core Data from Southern Greenland, 1984, NSF Arctic Data Center. doi:10.5065/D6S180MH, 2016.
1990	Mayewski_1990	72.58	-38.46	-30.3	203	6.1	5.3	Mayewski, P., and Whitlow S.: Snow Pit Data from Greenland Summit, 1989 to 1993. NSF Arctic Data Center. doi:10.5065/D6NP22KX, 2016.
2010	ACT10A	65.70	-41.48	-15.0	1281	46.6	4.1	Miège, C., Forster R.C., B. J., Burgess, E., McConnell, J., Pasteris, D., and Spikes, V. B.: Southeast Greenland high accumulation rates derived from firn cores and ground-penetrating radar, Ann. Glaciol., 54, 63, 322-332, doi:10.3189/2013AoG63A358, 2013.
2010	ACT10B	65.78	-41.87	-16.5	1101	50.8	4.7	
2010	ACT10C	66.00	-42.78	-19.5	838	49.1	4.4	
2011	T21_2011	70.54	-43.02	-24.2	357	9.5	4.5	Morris, E. M., and Wingham, D. J.: Densification of polar snow: Meaurements, modeling and implication for altimetry, J. Geophys. Res.-Earth, doi:10.1002/2013JF002898, 2014.
2011	T21c_2011	70.54	-43.02	-24.2	357	8.2	4.5	
2011	T23_2011	70.63	-42.58	-24.6	344	8.6	4.8	
2011	T27_2011	70.78	-41.54	-25.7	318	8.4	4.8	

2011	T31_2011	70.91	-40.64	-26.7	296	9.8	4.8
2011	T39_2011	71.04	-38.46	-28.4	263	6.8	4.8
2011	T41_2011	71.08	-37.92	-28.8	258	6.8	5.1
2011	T41b_2011	71.08	-37.92	-28.8	258	7.3	5.0
2011	T41c_2011	71.08	-37.92	-28.8	258	7.0	5.1
2011	T41d_2011	71.08	-37.92	-28.8	258	6.2	5.2
2010	T21_2010	70.54	-43.02	-24.2	357	10.2	4.7
2010	T21b_2010	70.54	-43.02	-24.2	357	10.0	4.7
2010	T23_2010	70.63	-42.58	-24.6	344	6.9	4.9
2010	T27_2010	70.78	-41.54	-25.7	318	8.9	4.9
2010	T31_2010	70.91	-40.64	-26.7	296	9.9	4.8
2010	T35_2010	70.98	-39.55	-27.6	275	8.0	5.1
2010	T39_2010	71.04	-38.46	-28.4	263	8.8	5.0
2010	T41_2010	71.08	-37.92	-28.8	258	9.3	5.0
2010	T41b_2010	71.08	-37.92	-28.8	258	7.1	5.3
2010	T41c_2010	71.08	-37.92	-28.8	258	8.7	5.2
2010	T41e_2010	71.08	-37.92	-28.8	258	5.7	5.4
2006	T41_2006	71.08	-37.92	-28.8	258	9.4	5.0
2006	T41b_2006	71.08	-37.92	-28.8	258	10.3	5.1
2006	T41c_2006	71.08	-37.92	-28.8	258	8.9	5.1
2006	T41d_2006	71.08	-37.92	-28.8	258	8.9	5.2
2006	T12_2006	70.18	-45.34	-21.5	398	9.1	4.6
2006	T15_2006	70.30	-44.57	-22.4	388	11.4	4.6
2006	T19_2006	70.47	-43.56	-23.6	369	12.0	4.5
2006	T31_2006	70.91	-40.64	-26.7	296	9.1	4.9
2006	T35_2006	70.98	-39.55	-27.6	275	9.4	4.9
2006	T41e_2006	71.08	-37.92	-28.8	258	10.5	5.0
2006	T12b_2006	70.18	-45.34	-21.5	398	7.2	4.7
2006	T15b_2006	70.30	-44.57	-22.4	388	11.7	4.6
2006	T19b_2006	70.47	-43.56	-23.6	369	12.1	4.5
2006	T21_2006	70.54	-43.02	-24.2	357	8.6	4.7

2006	T23_2006	70.63	-42.58	-24.6	344	6.7	4.8
2006	T27_2006	70.78	-41.54	-25.7	318	8.2	4.7
2006	T31b_2006	70.91	-40.64	-26.7	296	8.5	4.9
2006	T35b_2006	70.98	-39.55	-27.6	275	9.5	4.8
2006	T39_2006	71.04	-38.46	-28.4	263	6.4	5.0
2006	T41f_2006	71.08	-37.92	-28.8	258	10.3	5.0
2006	T05_2006	69.85	-47.25	-18.7	425	11.0	4.1
2006	T09_2006	70.02	-46.31	-20.1	402	10.1	4.5
2006	T21b_2006	70.54	-43.02	-24.2	357	9.4	4.6
2006	T41g_2006	71.08	-37.92	-28.8	258	9.5	5.0
2006	T41h_2006	71.08	-37.92	-28.8	258	10.4	5.0
2006	T41i_2006	71.08	-37.92	-28.8	258	9.0	5.1
2006	T41j_2006	71.08	-37.92	-28.8	258	8.8	5.2
2004	T41_Spring_2004	71.08	-37.92	-28.8	258	11.4	5.0
2004	T41b_Spring_2004	71.08	-37.92	-28.8	258	11.1	5.1
2004	T41c_Spring_2004	71.08	-37.92	-28.8	258	10.6	5.1
2004	T41d_Spring_2004	71.08	-37.92	-28.8	258	11.2	5.2
2004	T41_Autumn_2004	71.08	-37.92	-28.8	258	10.2	5.0
2004	T41b_Autumn_2004	71.08	-37.92	-28.8	258	10.0	5.0
2004	T41c_Autumn_2004	71.08	-37.92	-28.8	258	10.7	5.1
2004	T41d_Autumn_2004	71.08	-37.92	-28.8	258	11.8	4.9
2004	T12_Spring_2004	70.18	-45.34	-21.5	398	12.7	4.5
2004	T15_Spring_2004	70.30	-44.57	-22.4	388	12.0	4.6
2004	T21_Spring_2004	70.54	-43.02	-24.2	357	13.8	4.6
2004	T23_Spring_2004	70.63	-42.58	-24.6	344	12.6	4.6
2004	T27_Spring_2004	70.78	-41.54	-25.7	318	12.0	4.8
2004	T31_Spring_2004	70.91	-40.64	-26.7	296	12.3	4.8
2004	T35_Spring_2004	70.98	-39.55	-27.6	275	11.9	4.9
2004	T39_Spring_2004	71.04	-38.46	-28.4	263	11.2	4.9
2004	T41e_Spring_2004	71.08	-37.92	-28.8	258	12.4	5.0
2004	T21b_Spring_2004	70.54	-43.02	-24.2	357	12.1	4.7

1998	CORE 6345	63.80	-45.00	-21.1	482	14.8	4.8	
1998	CORE 6348	63.00	-48.00	-15.8	650	15.0	3.9	
1998	CORE 6642 (B)	66.50	-42.50	-20.7	690	20.5	4.6	
1998	CORE 6745	67.50	-45.00	-20.1	334	12.1	4.7	
1998	CORE 6839	68.50	-39.00	-24.3	386	11.9	4.9	
1998	CORE 6841	68.00	-41.00	-23.2	480	12.0	4.8	
1998	CORE 6938	69.00	-38.00	-25.6	372	12.2	5.0	
1998	CORE 6939	69.60	-39.00	-26.1	317	12.3	5.0	
1998	CORE 6941	69.40	-41.00	-24.5	330	11.7	4.9	
1998	CORE 6943	69.20	-43.00	-22.7	339	17.6	4.8	
1998	CORE 6945	69.00	-45.00	-20.3	337	18.6	4.7	
1998	CORE 7145	71.50	-45.00	-24.0	380	12.0	4.9	
1998	CORE 7245	72.25	-45.00	-25.4	348	12.1	4.9	
1998	CORE 7249	72.20	-49.40	-21.0	743	15.3	4.6	Mosley-Thompson, E., McConnell, J., Bales, R., Li, Z., Lin, P.-N., and Steffen, K.: Local to regional-scale variability of annual net accumulation on the Greenlandice sheet from PARCA cores, J. Geophys.l Res., 106, 33839–33851, doi:10.1029/2001JD900067, 2001.
1998	CORE 7345	73.00	-45.00	-26.5	274	14.5	5.1	
1998	CORE 7347	73.60	-47.20	-25.3	274	12.2	5.0	
1998	DYE2 1998 core A	66.48	-46.28	-18.4	355	120.0	4.4	
1998	DYE2 1998 core B	66.48	-46.28	-18.4	355	20.1	4.5	
1997	CORE 7147	71.05	-47.23	-20.8	415	19.9	4.7	
1997	CORE 7247	71.93	-47.49	-22.2	440	19.7	4.8	
1997	CORE 7551	75.00	-51.00	-23.4	349	21.1	4.9	
1997	CORE 7653	76.00	-53.00	-23.8	386	14.9	4.9	
1997	N. Dye 3 (Saddle) - A	66.00	-44.50	-21.0	519	18.7	4.5	
1997	N. Dye 3 (Saddle) - B	66.00	-44.50	-21.0	519	17.3	4.8	
1997	S. TUNU Core A	69.50	-34.50	-21.0	647	20.6	4.9	
1997	S. TUNU Core B	69.50	-34.50	-21.0	647	10.2	4.9	
1997	S. TUNU Core C	69.50	-34.50	-21.0	647	10.3	4.9	
1997	S. Dome Core A	63.15	-44.82	-20.8	918	24.6	4.9	
1997	S. Dome Core B	63.15	-44.82	-20.8	918	15.3	4.9	
1997	NASA East Core A	75.00	-30.00	-28.1	167	20.2	5.3	
1997	NASA East Core B	75.00	-30.00	-28.1	167	10.8	5.3	

2007	CP_2007	70.00	-47.00	-19.2	411	152.1	4.7	Porter, S., and Mosley-Thompson, E.: Exploring seasonal accumulation bias in a west central Greenland ice core with observed and reanalyzed data, J. Glaciol., 60, 224, 1065-1074, doi:10.3189/2014JoG13J233, 2014.
1963	DYE-2 1963	66.47	-46.28	-18.4	355	31.8	4.1	Reed, S.: Performance Study of the Dewline Ice Cap Stations, 1963, CRREL Special Report 72, 1966.
1967	Carrefour_1967	69.82	-47.43	-18.2	425	19.8	4.2	Renaud, A.: Etude physiques et chimiques sur la glace de l'indlandsis du Groenland , Medd. Groenland, 2, 177, 100-107, 1959.
1959	Camp_VI_1959	69.70	-48.27	-16.1	444	39.5	4.1	
1959	Milcent_1959	70.30	-44.57	-22.4	388	20.2	4.7	
1959	Centrale_1959	70.91	-40.64	-26.7	296	30.9	4.7	
1959	Crete_1959	71.12	-37.32	-29.1	256	15.8	5.0	
1959	Jarl-Joset_1959	71.35	-33.48	-26.7	273	27.0	4.9	
1959	Depot 420_1959	72.23	-32.33	-27.2	254	13.8	4.9	
1990	GRIP	72.57	-37.62	-30.5	202	82.3	5.3	Spencer, M. K., Aller, R. B., and Creyts, T. T.: Preliminary firn-densification model with 38-site dataset, J. Glaciol., 47, 159, 671-676, 2001.
1984	Dye3-11B-1984	65.18	-43.83	-20.2	620	24.8	4.9	
1984	Dye3-15B-1984	65.18	-43.83	-20.2	620	24.8	4.9	
1984	Dye3-16C-1984	65.18	-43.83	-20.2	620	24.8	4.9	
1983	Dye3-4B-1983	65.18	-43.83	-20.2	620	173.6	4.8	
1984	Dye3-5B-1984	65.18	-43.83	-20.2	620	24.8	4.8	
1984	Dye3-9B-1984	65.18	-43.83	-20.2	620	24.8	4.8	
1983	Dye3-station1-1983	65.18	-43.83	-20.2	620	27.1	4.8	
2007	NEEM07S3	77.50	-51.00	-28.7	205	80.0	5.2	Steen-Larsen, H. C., Masson-Delmotte, V., Sjolte, J., Johnsen, S. J., Vinther, B. M., Bréon, F.-M., ...: Understanding the climatic signal in the water stable isotope records from the NEEM cores, J. Geophys. Res., 116, D06108, doi:10.1029/2010JD014311, 2011.
2012	NEGIS	75.62	-35.96	-30.6	94	66.3	5.8	Vallelonga, P., Christianson, K., Alley, R. B., Anandakrishnan, S., Christian, J. E., Dahl-Jensen, D., . . . Popp, T.: Initial results from geophysical surveys and shallow coring of the Northeast Greenland Ice Stream (NEGIS), Cryosphere, 8, 1275-1287, doi:10.5194/tc-8-1275-2014, 2014.
1987	Summit	72.29	-37.92	-30.4	215	16.3	5.1	van der Veen, C. J., Mosley-Thompson, E., Jezek, K. C., Whillans, I. M., and Bolzan, J. F.: Accumulation rates in
1981	L1 (1001)	65.39	-47.67	-16.5	419	20.0	3.2	

1981	L2 (12.18)	65.39	-47.19	-17.6	398	20.1	3.8	South and Central Greenland, Polar Geography, 25, 2, 79-162, doi:10.1080/10889370109377709, 2001.
1981	L5 (15.12)	65.40	-47.85	-16.2	418	20.7	2.4	
1981	U3 (2003)	64.93	-45.60	-20.3	403	15.1	4.4	
1981	U4 (2004)	64.98	-46.03	-19.8	395	16.0	4.1	
1981	U6 (2006)	65.29	-45.83	-19.9	393	15.0	4.2	
1981	U7 (2007)	65.25	-45.41	-20.4	408	15.1	4.5	
1981	1D (3001)	65.25	-43.49	-19.3	750	8.7	3.7	
1981	8D (3008)	64.85	-44.65	-20.9	504	18.3	4.3	
1995	B26_NGT37_1995	77.15	-49.13	-29.4	198	118.7	5.5	
1995	B27_NGT39_1995	76.39	-46.29	-29.9	192	172.4	5.3	
1995	B28_NGT39_1995	76.39	-46.29	-29.9	192	70.1	5.4	
1995	B29_NGT42_1995	76.00	-43.29	-30.9	144	108.2	5.8	
1995	B30_NGT45_1995	75.00	-42.00	-30.8	150	163.9	5.4	
1994	B19_NGT19_1994	78.00	-36.23	-29.5	83	149.4	5.6	
1994	B20_NGT23_1994	78.50	-36.30	-29.7	86	149.7	5.5	Wilhelms, F.: Measuring the Conductivity and Density of Ice Cores, Ber. Polarforsch., 191, 1996.
1994	B21_NGT27_1994	80.00	-41.08	-29.6	121	100.4	5.6	
1994	B22_NGT30_1994	79.20	-45.54	-29.6	134	119.6	5.6	
1994	B23_NGT33_1994	78.00	-44.00	-31.3	115	150.2	5.7	
1993	B16_NGT03_1993	73.56	-37.37	-30.3	135	101.6	5.6	
1993	B17_NGT06_1993	75.15	-37.37	-31.1	92	100.4	5.6	
1993	B18_NGT14_1993	76.37	-36.24	-30.0	88	149.0	5.5	
2017	core_1_2017	67.00	-47.02	-16.7	348	23.3	0.9	
2017	core_2_2017	66.99	-44.39	-21.0	380	22.2	4.2	
2017	core_3_2017	66.48	-42.50	-20.7	690	22.5	4.4	
2017	core_4_2017	66.00	-44.50	-21.0	519	22.7	4.6	
2017	core_5_2017	66.48	-46.29	-18.4	355	23.0	3.3	
2017	core_6_2017	66.48	-46.29	-18.4	355	7.0	3.2	This study
2017	core_7_2017	66.48	-46.29	-18.4	355	5.6	3.3	
2017	core_8_2017	66.63	-46.89	-17.2	330	15.2	2.0	
2017	core_9_2017	69.88	-47.03	-19.0	420	22.3	3.9	
2017	core_10_2017	75.63	-35.98	-30.6	94	20.1	5.4	

2017	core_11_2017	72.58	-38.47	-30.3	203	22.2	5.2
2016	core_1_2016	67.00	-47.03	-16.7	348	8.0	1.1
2016	core_2_2016	67.00	-47.03	-16.7	348	16.5	1.6
2016	core_3_2016	66.99	-44.39	-21.0	380	18.0	4.7
2016	core_4_2016	66.48	-42.50	-20.7	690	18.4	4.7
2016	core_5_2016	66.00	-44.50	-21.0	519	18.5	4.5
2016	core_6_2016	72.58	-38.47	-30.3	203	16.3	5.5
2016	core_7_2016	75.63	-35.98	-30.6	94	15.9	5.4
2016	core_8_2016	69.88	-47.03	-19.0	420	18.1	3.9
2016	core_10_2016	66.48	-46.29	-18.4	355	17.4	3.3