

Supplementary material

Table S1. Mann-Kendall test results for each individual records from Arctic 2k database.

PAGES ID	Contry/Region	Site	Archive type	Proxy	τ	pvalue	Significance
Arc_04	Canada	Lower Lake Murray	Lake sediment	Mass acc. rate	-0,0393	0,012	99%
Arc_05	Greenland	Camp Century	Ice core	d18O	-0,0014	0,0961	4%
Arc_09	Canada	Coppermine River	Tree ring	Ring width	0,0971	< 0,001	99%
Arc_11	Greenland	GISP2	Ice core	d18O	-0,0441	0,037	97%
Arc_12	Scandinavia	Torneträsk	Tree ring	Ring width	-0,0515	0,001	99%
Arc_13	Scandinavia	Jämtland	Tree ring	Maximum density	-0,252	< 0,001	99%
Arc_14	Scandinavia	Lake Lehmilampi	Lake sediment	Varve thickness	-0,0234	0,144	86%
Arc_15	Scandinavia	Lapland	Tree ring	Ring width	-0,0039	0,013	99%
Arc_17	North Atlantic	Lomonosovfonna	Ice core	d18O	-0,603	< 0,001	99%
Arc_18	North Atlantic	Austfonna	Ice core	d18O	-0,161	< 0,001	99%
Arc_19	Scandinavia	Forfjorddalen 2	Tree ring	Ring width	0,0281	0,321	68%
Arc_20	Arctic Canada	Lake C2	Lake sediment	Varve thickness	-0,0357	0,023	98%
Arc_22	North Atlantic	Hvitrvatn	Lake sediment	Varve thickness	0,336	< 0,001	99%
Arc_25	Arctic Canada	Donard Lake	Lake sediment	Thickness	-0,0616	0,003	99%
Arc_26	Scandinavia	Lake Nautajärvi	Lake sediment	Organic matter	-0,0898	< 0,001	99%
Arc_27	Greenland	B16	Ice core	d18O	0,0301	0,413	59%
Arc_28	Greenland	B18	Ice core	d18O	-0,0763	< 0,001	99%
Arc_29	Greenland	B21	Ice core	d18O	-0,0512	0,119	89%
Arc_30	Arctic Canada	Big Round Lake	Lake sediment	Varve thickness	0,0442	0,056	95%
Arc_31	Scandinavia	Lake Kottajärvi	Lake sediment	X-ray density	0,129	< 0,001	99%
Arc_32	Greenland	NGRIP1	Ice core	d18O	-0,0642	< 0,001	99%
Arc_33	Arctic Canada	Agassiz Ice Cap	Ice core	d18O	-0,202	< 0,001	99%
Arc_34	Greenland	Crête	Ice core	d18O	-0,025	0,232	77%
Arc_35	Greenland	Dye-3	Ice core	d18O	-0,103	< 0,001	99%
Arc_36	Greenland	GRIP	Ice core	d18O	-0,0793	< 0,001	99%
Arc_37	North Atlantic	Iceland	Historic	Ice Cover	-0,527	< 0,001	99%
Arc_38	North Atlantic	MD95-2011	Marine sediment	Diatoms	-0,219	< 0,001	99%
Arc_39	North Atlantic	MD95-2011	Marine sediment	Alkenone	0,0144	0,141	86%
Arc_43	Greenland	Lake Braya So	Lake sediment	Uk37	0,126	0,182	82%
Arc_44	Arctic Canada	Devon Ice Cap	Ice core	proxy	-0,292	< 0,001	99%
Arc_45	Arctic Canada	Penny Ice Cap	Ice core	d18O	-0,204	0,011	99%
Arc_47	North Atlantic	MD99-2275	Marine sediment	Diatoms	-0,352	< 0,001	99%
Arc_49	Scandinavia	Okshola Cave	Speleothem	d18O	0,141	0,117	89%
Arc_50	Scandinavia	Lake Hampträsk	Lake sediment	Chironomids	-0,0431	< 0,001	99%
Arc_51	Scandinavia	Lake Pieni-Kauro	Lake sediment	Chironomids	-0,367	0,003	99%
Arc_52	North Atlantic	Lake Igaliku	Lake sediment	Pollen accumulation	-0,166	0,196	81%
Arc_53	Arctic Canada	Penny Ice Cap	Ice core	Ice melt	-0,338	< 0,001	99%
Arc_54	Canada	Lake 4	Lake sediment	Chironomids	0,0971	< 0,001	99%
Arc_55	North Atlantic	P1003	Marine sediment	d18O	0,353	< 0,001	99%
Arc_57	North Atlantic	MD99-2275	Marine sediment	Alkenone	-0,29	< 0,001	99%
Arc_58	North Atlantic	MSM5/5-712	Marine sediment	Planktic foraminifers	0,199	0,094	91%
Arc_59	Greenland	Renland	Ice core	d18O	-0,108	0,002	99%
Arc_01	Alaska	Blue Lake	Lake sediment	Varve thickness	-0,0034	-0,86	14%
Arc_06	Alaska	seward Peninsula	Tree ring	Ring width	-0,0493	0,05	95%

Table S1. Continued

PAGES ID	Contry/Region	Site	Archive type	Proxy	τ	pvalue	Significance
Arc_07	Alaska	Gulf of Alaska	Tree ring	Ring width	-0,469	< 0,001	99%
Arc_08	Canada	Yukon	Tree ring	Ring width	0,0476	0,07	93%
Arc_23	Alaska	Iceberg Lake	Lake sediment	Varve thickness	0,126	< 0,001	99%
Arc_40	Alaska	Moose Lake	Lake sediment	Midge assemblages	-0,179	0,08	92%
Arc_41	Alaska	Hudson Lake	Lake sediment	Midge assemblages	-0,0872	0,5	50%
Arc_42	Alaska	Screaming Lynx Lake	Lake sediment	Midge assemblages	-0,111	0,26	74%
Arc_48	Alaska	Lone Spruce Pond	Lake sediment	Bsi	0,05	0,42	58%
Arc_02	Central Russia	Avam-Taimyr	Tree ring	Ring width	-0,0101	0,52	48%
Arc_03	Central Russia	Yamal	Tree ring	Ring width	-0,0343	0,03	97%
Arc_10	Central Russia	Polar Urals	Tree ring	Maximum density	-0,187	< 0,001	99%
Arc_16	Eastern Russia	Indigurka	Tree ring	Ring width, STD	-0,0976	< 0,001	99%
Arc_24	Eastern Russia	Lower Lena River	Tree ring	Ring width, ARS	0,0006	0,87	13%