

Supplementary information for:

Missing sea-level rise in southeast Greenland during and since the Little Ice Age

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Data on ingression of isolation basin at Timmiarmiut in southeast Greenland used to calculate millennial GIA at Dronning Marie Dal and information used to calculate RSL reconstructions at Dronning Marie Dal salt marsh.



Figure S1. A) Location of isolation basin (62.4987°N, -42.2577°W) on the island of Timmiarmiut (62.51°N, -42.22°W) in southeast Greenland (Source: “Timmiarmiut.” 62.515669, -42.206218. Google Earth Landsat/Copernicus imagery accessed on 23rd November 2022), B) the basin is ~450 m from west to east and ~675 m from north to south at its largest point. The basin sill is 1.33 ± 0.5 m above MSL. (Source: “Lake XC1403.” 62.497715, -42.257307. © Google Earth. Maxar Technologies image taken on 11th August 2009 accessed on 23rd November 2022).

Timmiarmiut isolation basin ingression

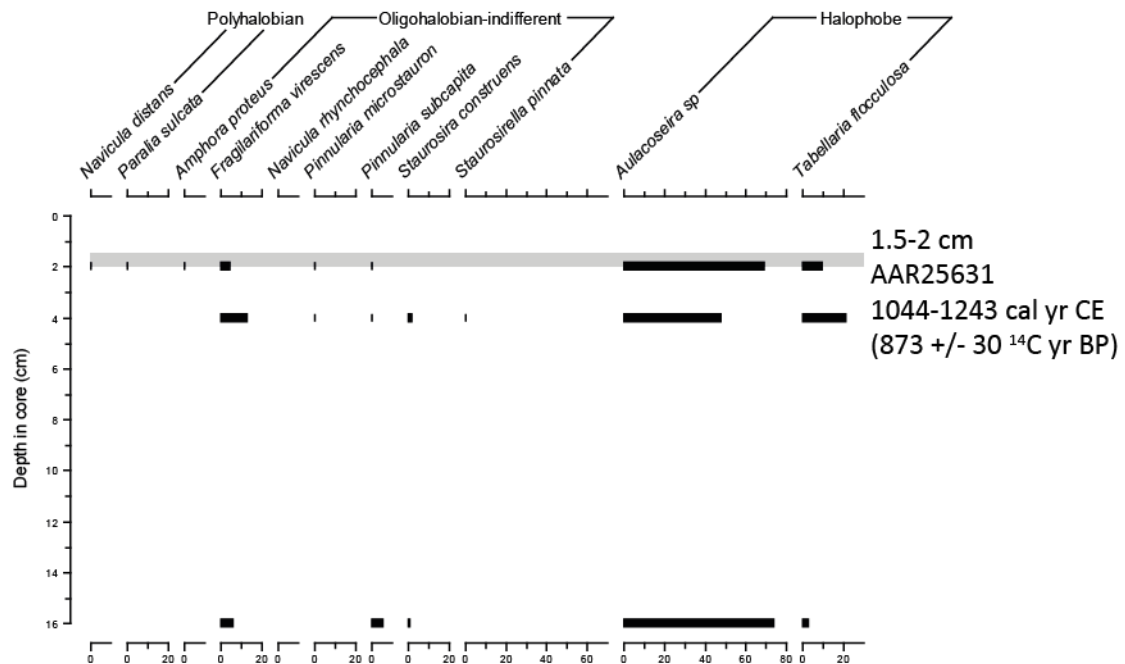


Figure S2. Fossil diatom counts from the top 16 cm of a core taken from isolation basin XC1403A showing the first occurrence of polyhalobian diatoms at 2-2.5 cm depth and assumed ingression of the basin at this point. The ¹⁴C sample is taken from 1.5-2 cm depth and represents tidal level between MHWST-HAT. The basin is surrounded by saltmarsh vegetation at present day indicating its elevation within the modern intertidal zone.

Table S1. Details of dating and RSL calculation for the ingression of basin XC1403A at Timmiarmiut, southeast Greenland.

Location (lat,lon)	Sill height (m MTL)	Reference Water Level	RSL (m)	Max cal age CE	Min cal age CE	Cal age error +/-	¹⁴ C age	Lab code
Timmiarmiut XC1403A (62.4987, -42.2577)	1.33 +/- 0.5	Ingression (MHWST to HAT) = mid point of range is 1.57 m above MTL	-0.24 +/- 0.5	1044	1243	99.5	873 +/- 30	AAR 25631

Table S2. Details of RSL calculations from salt marsh core at Dronning Marie Dal. Visual assessment criteria are PI = *Pinnularia intermedia*, NC = *Navicula cincta*. PMSE is Palaeomارش surface elevation. Tidal levels are calculated in relation to tidal levels at Tasiilaq (see main text for information on tidal measurements).

Core depth (cm)	Elevation (m MTL)	Visual assessment criteria	PMSE (m)	RSL (m)	RSL error (m)	Mid age from 95% credible interval range (yr CE)	Age error 95% credible interval (yr)
0	1.78	Surface	1.78	0.00	0.1	2013.5 0.5	0.5
0.125	1.78	PI 10%	1.77	0.01	0.1	2005	11
0.375	1.78	PI 6%	1.76	0.02	0.1	1995.5	21.5
0.625	1.77	PI 6%	1.75	0.02	0.1	1987.5	29.5
0.875	1.77	PI 5%	1.74	0.03	0.1	1981	36
1.25	1.77	PI below 5%	1.73	0.04	0.1	1971.5	44.5
1.75	1.76	PI below 5%	1.72	0.04	0.1	1959	50
2.25	1.76	PI below 5%	1.7	0.06	0.1	1941.5	53.5
2.75	1.75	PI below 5%	1.69	0.06	0.15	1926.5	50.5
3.25	1.75	PI below 5%	1.68	0.07	0.15	1912.5	44.5
3.75	1.74	PI below 5%, NC above 5%	1.67	0.07	0.15	1897	35
4.25	1.74	PI below 5%, NC above 5%	1.66	0.08	0.15	1881	22
4.75	1.73	PI below 5%, NC above 5%	1.65	0.08	0.15	1869.5	27.5
5.25	1.73	PI below 5%, NC above 5% (1.65)	1.65	0.08	0.15	1857.5	33.5
5.75	1.72	PI below 5%, NC above 5%	1.65	0.07	0.15	1847	38
36.25	1.72	PI below 5%, NC above 5%	1.65	0.07	0.15	1837.5	41.5
6.75	1.71	PI below 5%, NC above 5%	1.65	0.06	0.15	1828.5	44.5
7.25	1.71	PI below 5%, NC above 5%	1.65	0.06	0.15	1818.5	47.5
7.75	1.70	PI below 5%, NC above 5%	1.65	0.05	0.15	1808.5	47.5
8.25	1.70	PI below 5%, NC above 5%	1.66	0.04	0.15	1799	48
8.75	1.69	PI below 5%, NC above 5%	1.67	0.02	0.15	1789	48
9.25	1.69	PI below 5%, NC above 5%	1.68	0.01	0.15	1779.5	45.5
9.75	1.68	PI below 5%, NC above 5%	1.7	-0.02	0.15	1770	44
10.25	1.68	PI above 5%	1.75	-0.07	0.15	1761.5	41.5
10.75	1.67	High marsh/Upland intermedia (1.78-2.2 m above MSL)	1.80	-0.13	0.1	1750.5	41.5
11.25	1.67	High marsh/Upland intermedia (1.78-2.2 m above MSL)	1.90	-0.23	0.1	1739.5	40.5
11.75	1.66	Upland Pinn intermedia (+1.9 m above MSL)	2.00	-0.34	0.1	1727.5	37.5