

Delivery of aged terrestrial organic matter to the Laptev Sea during the last deglaciation

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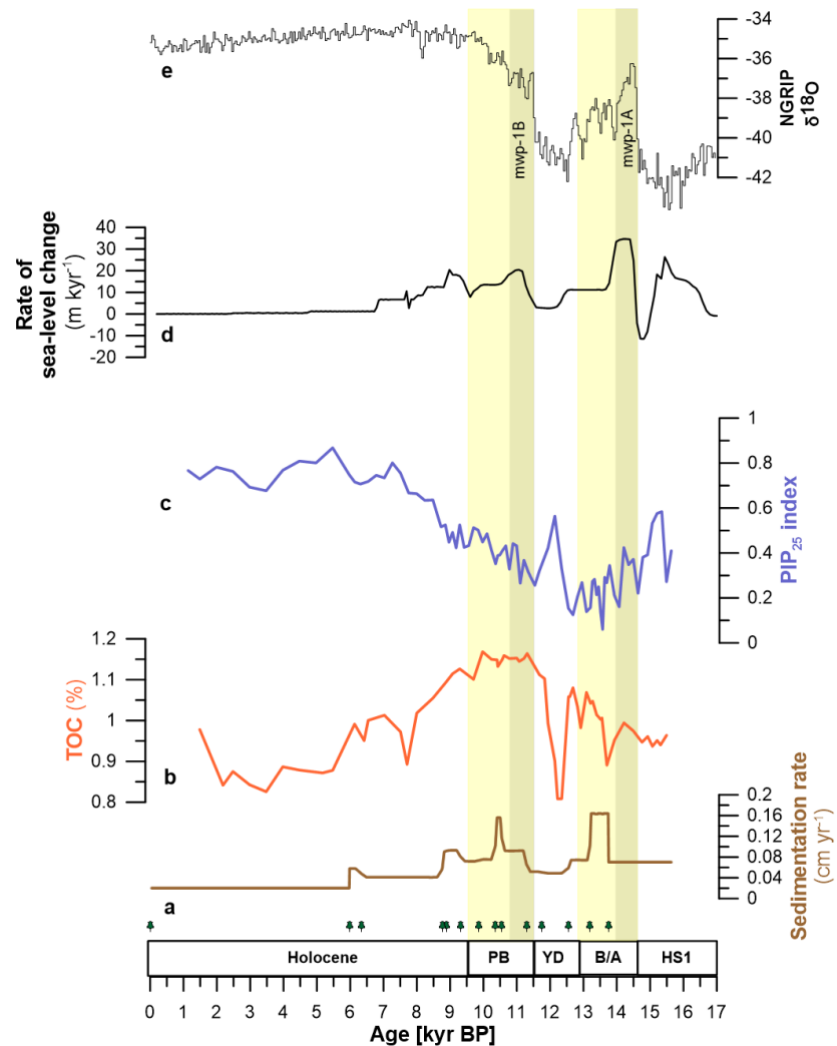


Figure S1. (a) Modelled sedimentation rate derived from the age-depth model for core PS2458-4 calculated in OxCal4.4 software. (b) Total organic carbon (TOC). (c) Sea-ice proxy PIP₂₅ index (Fahl & Stein, 2012). (d) Rate of global sea-level change (Lambeck et al., 2014). (e) NGRIP δ¹⁸O (Andersen et al., 2004).

Table S1. List of samples for bulk organic carbon measurements for core PS2458-4.

Depth (cm)	F ¹⁴ C	± σ -F ¹⁴ C	Δ^{14} C [‰]	± σ^{14} C	Deposition Age (cal yr BP)	σ -Depositional Age (yr)	AMS ¹⁴ C Age (yr)	σ -AMS ¹⁴ C Age (yr)	Age at deposition (yr)	± 1 σ (yr)
30	0.4578	0.0019	-539.8	32.8	1487	741	6276.6	32.8	5717	788
44	0.4052	0.0013	-592.7	25.3	2184	829	7256.2	25.3	5903	882
50	0.3791	0.0017	-619.0	36.4	2483	864	7792.6	36.4	6077	911
60	0.3650	0.0014	-633.1	30.3	2982	931	8095.2	30.3	6049	984
70	0.3433	0.0016	-654.9	37.4	3480	876	8589.0	37.4	6075	916
80	0.3237	0.0012	-674.6	30.8	3979	820	9059.8	30.8	6242	838
90	0.3060	0.0015	-692.4	39.8	4477	768	9511.1	39.8	6375	905
104	0.2656	0.0011	-733.0	33.4	5175	575	10648.9	33.4	7502	613
110	0.1886	0.0010	-810.4	41.5	5474	463	13398.8	41.5	10658	542
130	0.2266	0.0011	-772.2	38.1	6133	192	11924.9	38.1	7673	296
145	0.1823	0.0007	-816.8	32.2	6419	239	13673.2	32.2	10102	318
150	0.1776	0.0013	-821.4	56.8	6541	311	13881.2	56.8	10316	419
170	0.1688	0.0009	-830.4	44.4	7027	457	14293.1	44.4	10344	560
190	0.1533	0.0012	-845.9	62.6	7513	501	15067.0	62.6	10936	633
198	0.1511	0.0006	-848.1	34.3	7708	494	15179.0	34.3	10754	605
210	0.1513	0.0009	-847.9	48.4	7997	465	15169.4	48.4	10469	578
230	0.1392	0.0009	-860.1	51.5	8485	334	15842.0	51.5	10618	415
250	0.1320	0.0012	-867.3	71.1	8859	135	16267.2	71.1	10801	244
270	0.1242	0.0012	-875.1	75.2	9075	184	16752.4	75.2	11180	293
287	0.1216	0.0006	-877.8	37.7	9258	197	16925.3	37.7	11193	250
290	0.1238	0.0009	-875.6	56.7	9290	197	16781.9	56.7	11007	284
320	0.1149	0.0011	-884.5	77.5	9702	212	17380.1	77.5	11282	331
340	0.1178	0.0011	-881.6	78.1	9974	190	17183.1	78.1	10753	293
360	0.1038	0.0011	-895.6	86.1	10240	169	18195.7	86.1	11916	266
377	0.0939	0.0005	-905.6	41.5	10410	127	19003.2	41.5	12543	176
380	0.0955	0.0011	-904.1	92.1	10430	129	18870.5	92.1	12336	259
400	0.0873	0.0008	-912.3	73.8	10562	136	19590.4	73.8	12993	273
405	0.0855	0.0005	-914.1	44.4	10617	157	19756.2	44.4	13171	229
420	0.0886	0.0008	-910.9	72.3	10780	198	19467.0	72.3	12705	362
440	0.0769	0.0008	-922.7	81.8	10997	210	20608.7	81.8	13832	355
447	0.0670	0.0004	-932.6	49.7	11073	204	21710.9	49.7	14876	261
460	0.0621	0.0010	-937.6	134.5	11215	179	22327.6	134.5	15459	385
468	0.0664	0.0005	-933.3	61.1	11310	165	21790.1	61.1	14722	273
487	0.0685	0.0004	-931.1	48.8	11676	239	21531.6	48.8	14180	289
495	0.0768	0.0005	-922.8	57.4	11835	252	20621.5	57.4	13015	369
500	0.0930	0.0006	-906.5	50.5	11938	272	19081.4	50.5	11059	317
510	0.0871	0.0006	-912.5	53.9	12142	278	19608.7	53.9	11426	411
514	0.0766	0.0005	-923.0	57.7	12224	264	20639.0	57.7	12649	382
530	0.0621	0.0005	-937.6	63.8	12551	137	22324.4	63.8	14127	298

533	0.0654	0.0005	-934.2	60.8	12592	152	21902.3	60.8	13552	266
540	0.0675	0.0005	-932.2	59.3	12686	180	21658.5	59.3	13236	231
550	0.0561	0.0007	-943.6	106	12821	197	23136.5	106.0	14610	317
557	0.0583	0.0004	-941.4	53.8	12915	196	22826.8	53.8	14277	266
570	0.0502	0.0010	-949.5	164.6	13091	160	24033.7	164.6	15116	385
590	0.0495	0.0007	-950.3	118.7	13272	130	24152.9	118.7	15046	333
610	0.0462	0.0007	-953.5	125.7	13394	156	24697.4	125.7	15551	280
616	0.0473	0.0004	-952.4	60.7	13431	162	24508.5	60.7	15340	246
630	0.0460	0.0007	-953.8	127.2	13516	175	24741.6	127.2	15456	298
636	0.0457	0.0003	-954.0	60.3	13553	179	24781.4	60.3	15464	271
680	0.0374	0.0007	-962.4	151.8	13927	197	26396.6	151.8	16719	397
700	0.0346	0.0007	-965.2	163.6	14211	197	27024.5	163.6	16937	305
720	0.0338	0.0010	-966.1	234.8	14496	198	27221.0	234.8	16825	378
750	0.0285	0.0007	-971.4	197.6	14922	201	28585.3	197.6	17861	604
770	0.0345	0.0007	-965.3	165.7	15207	203	27047.8	165.7	15958	318
777	0.0300	0.0003	-969.9	79.4	15306	203	28172.3	79.4	16896	502
790	0.0257	0.0007	-974.2	217.4	15491	205	29422.5	217.4	18478	454

Table S2. List of compound-specific radiocarbon data for core PS2458-4.

Depth (cm)	Individual FAME	F ¹⁴ C	± σ-F ¹⁴ C	Δ ¹⁴ C [‰]	± σ ¹⁴ C (‰)	Deposition Age (cal yr BP)	σ-Deposition Age (yr)	AMS ¹⁴ C Age (yr)	σ-AMS ¹⁴ C Age (yr)	Age at deposition (yr)	± 1σ (yr)
776-778	n-C28:0	0.0218	0.0050	-978.1	5.0	15306	203	30748.6	1668.2	20576	2330
737-739	n-C26:0	0.0272	0.0055	-972.6	5.6	14752	199	28942.6	1486.0	18950	1992
635-637	n-C28:0	0.0307	0.0068	-969.2	6.8	13551	183	27993.4	1604.1	19363	2119
635-637	n-C26:0	0.0258	0.0072	-974.1	7.2	13551	183	29390.1	1985.6	21151	2830
615-617	n-C26:0	0.0392	0.0064	-960.6	6.4	13429	166	26011.1	1212.8	17098	1543
556-558	n-C28:0	0.0349	0.0060	-964.9	6.0	12913	198	26949.4	1282.9	18701	1685
556-558	n-C26:0	0.0409	0.0090	-958.9	9.0	12913	198	25679.2	1597.5	17589	2130
532-534	n-C26:0	0.0315	0.0060	-968.4	6.0	12590	154	27786.7	1396.8	19955	1760
514-516	n-C28:0	0.0974	0.0120	-902.1	11.9	12243	260	18706.9	934.9	10525	1410
514-516	n-C26:0	0.1161	0.0081	-883.3	8.0	12243	260	17296.2	540.2	8770	948
513-515	n-C28:0	0.0819	0.0141	-917.7	14.2	12223	265	20102.3	1274.2	12270	1740
486-488	n-C28:0	0.0329	0.0056	-966.9	5.6	11675	239	27424.3	1254.9	20423	1665
486-488	n-C26:0	0.0427	0.0038	-957.1	3.8	11675	239	25333.8	693.5	17958	945
446-448	n-C26:0	0.0301	0.0038	-969.7	3.8	11072	203	28139.8	957.8	21550	1245
376-378	n-C28:0	0.0337	0.0051	-966.1	5.1	10410	126	27227.3	1139.3	21421	1423
376-378	n-C26:0	0.0462	0.0048	-953.6	4.8	10410	126	24699.7	795.0	18626	942
286-288	n-C28:0	0.0480	0.0077	-951.7	7.7	9256	196	24385.4	1200.8	19655	1462
286-288	n-C26:0	0.0578	0.0051	-941.9	5.1	9256	196	22903.2	683.4	17959	900
197-199	n-C28:0	0.0708	0.0122	-928.8	12.2	7705	494	21266.0	1278.9	18010	1942
197-199	n-C26:0	0.0662	0.0078	-933.5	7.8	7705	494	21815.7	894.6	18480	1458
144-146	n-C28:0	0.1190	0.0074	-880.4	7.4	6418	238	17097.4	482.2	14333	873
144-146	n-C26:0	0.0915	0.0071	-908.0	7.1	6418	238	19208.8	597.3	16868	928
103-105	n-C28:0	0.1363	0.0098	-863.0	9.9	5175	575	16009.5	556.3	14306	1227
103-105	n-C26:0	0.1256	0.0067	-873.7	6.7	5175	575	16665.0	414.9	14990	1095
43-45	n-C28:0	0.1700	0.0118	-829.1	11.8	2184	829	14233.3	539.7	15132	1536
43-45	n-C26:0	0.2126	0.0073	-786.3	7.3	2184	829	12438.1	270.4	12461	1268
41-43	n-C28:0	0.2155	0.0080	-783.4	8.0	2085	814	12329.6	291.5	12432	1274
41-43	n-C26:0	0.2055	0.0060	-793.4	6.0	2085	814	12710.6	230.9	12962	1236