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Potentially bioavailable iron delivery by iceberg-hosted sediments and atmospheric dust to the polar oceans

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This file contains Tables S1, S2, S3 and S4.

Table S1. Iceberg and glacial ice-hosted sediment samples

Locality (No of Samples)	Literature Reference
Icebergs	
Narsarsuaq, West Greenland (11)	New Data*
Sermilk, East Greenland (8)	New Data*
Kongsfjorden, Svalbard (14)	New Data
Wallenbergfjorden, Svalbard (8)	New Data
Liefdenfjorden, Svalbard (1)	Raiswell et al. (2008a)
Weddell Sea, Antarctica (3)	Shaw et al. (2011)
Seymour and King George Islands, Antarctica (6)	Raiswell et al. (2008a)
Glacial Ice	
Mt. Capley, Antarctica (2)	New Data
Charles Peak, Antarctica (2)	New Data
Canada Glacier, Antarctica (1)	Raiswell et al. (2008a)
Taylor Glacier, Antarctica (3)	Raiswell et al. (2008a)
Russell Glacier, Greenland (3)	New Data and Yde et al. (2010)
Mittivakkt Glacier, Greenland (1)	Yde et al. (2010)
Finsterwalderbreen, Svalbard (2)	New Data
Engabreen, Norway (2)	New Data

Filtered through 2.7µm Whatman 542 filter. *Filtered through 0.4/0.45µm membrane filters.

Table S2. Atmospheric dust samples

Locality (No of Samples)	Sample Description or Reference
Crete (1)	New Data, dry deposition sampled from a dust collector

Rosh Pina, Israel (1)	New Data, dry deposition sampled from clean glass surface
Beijing, China (1)	New data, dry deposition from a clean surface (Shi et al. 2012)
Rio Gallegos, Southern Patagonia (3)	New data, dry deposition from a clean surface
Eastern Tropical Atlantic Ocean (6)	New Data (see Baker et al., 2006)
Sea of Marmara (1)	New Data (see Baker et al., 2006).
Eastern Med. (2)	Raiswell et al. (2008b) and Shi et al. (2012)

Table S3. Fe contents of iceberg-hosted sediments

ICEBERGS	**% FeA**	**%FeD**
West Greenland		
130717 Iceberg A	0.026	0.129
130717 Iceberg A	0.032	0.190
130701 Iceberg B3	0.051	0.537
130701 Iceberg B2	0.058	0.227
130701 Iceberg B1a	0.020	0.298
130701 Iceberg B1b	0.051	0.520
130701 Iceberg 2	0.041	0.310
130701 Iceberg 2	0.058	0.178
130701 Iceberg 1Di	0.063	0.660
130701 Iceberg 1Di	0.038	0.435
130619 Iceberg 1b	0.140	0.209
East Greenland		

140727 Iceberg 1a	0.037	0.330
140727 Iceberg 1b	0.052	0.066
140727 Iceberg 2a	0.049	0.429
140727 Iceberg 2b	0.026	0.350
140727 Iceberg 2c	0.043	0.550
140727 Iceberg 2d	0.032	0.418
140727 Iceberg 2e	0.010	0.190
140727 Iceberg 3	0.025	0.208
Antarctica		
Seymour Island S1	0.071	0.780
Seymour Island S2	0.195	0.860
Seymour Island S3	0.357	1.20
Seymour Island S4	0.150	0.810
King George Island KG1	0.057	0.310
King George Island KG2	0.058	0.630
Weddell Sea LMG-05[3]	0.046	0.426
Weddell Sea NBP-09 IRD1	0.165	0.625
Weddell Sea NBP-09 IRD4	0.496	0.089
Svalbard		
Kongsfjorden 1	0.034	0.375
2	0.016	0.930
3	0.057	0.252
4	0.187	0.378
5	0.037	0.252
6	0.263	0.566
7	0.250	0.293
8	0.073	0.208
9	0.256	0.486
K1	0.374	0.810
K2	0.094	1.185
K3	0.044	0.623
K4	0.129	0.485

3

K5	0.089	0.592
Liefdenfjorden	0.050	0.210
Wallenbergfjorden IMS1	0.254	No data
IMS2	0.289	No data
IMS3	0.172	0.380
IMS3/2	0.236	No data
IMS4	0.068	0.200
IMS5	0.047	0.44
IMS6	0.076	0.250
IMS7	0.481	0.840
Mean[1]	**0.076**	**0.377**
Low[2]	**0.030**	**0.200**
High[2]	**0.194**	**0.715**
GLACIAL ICE		
Antarctica		
Mt. Capley	0.170	0.170
Mt. Capley	0.090	0.170
Charles Peak 6	0.030	0.460
Charles Peak 7	0.010	0.060
Taylor T1	0.029	0.140
Taylor T2	0.020	0.100
Taylor T3	0.029	0.100
Canada C1	0.023	0.027
Greenland		
Russell R0	0.032	0.000
Mittivakkt	0.016	0.093
Russell R1	0.014	0.024
Russell R2	0.035	0.046
Norway		
Engabreen E1	0.026	0.050
Engabreen E2	0.033	0.085
Svalbard		
Finsterwalderbreen F1	0.045	0.096
Finsterwalderbreen F2	0.030	0.179
Mean[1]	**0.030**	**0.091**

Low[2]	**0.015**	**0.042**
High[2]	**0.060**	**0.196**

[1]Logarithmic Mean for FeA and FeD

[2]Low and high values for FeA and FeD derived from the logarithmic standard deviation.

[3]Mean of size fractions 63-125 µm and 125-250µm.

Table S4. Fe contents of aeolian dust samples

Sample Location	**%FeA**	**%FeD**	**% FeT**	**(FeA+FeD)/FeT**
Crete.	0.009	0.71	No data	No data
Rosh Pina, Israel.	0.011	1.13	No data	No data
Eastern Med.	0.03	0.82	No data	No data
Eastern Med.	0.025	0.975	2.81	0.36
Beijing, China	0.06	0.78	3.50	0.24
Atlantic M03 18.0^{o}N 20.7^{o}W to 18^{o}N 19^{o}W	0.058	1.58	3.88	0.42
Atlantic M04 31.95^{o}N 21.46^{o}W to 30.0^{o}N 20.0^{o}W	0.106	1.46	3.01	0.52
Atlantic M01 17.1^{o}N 24.8^{o}W to 18.0^{o}N 22.5^{o}W	0.033	1.58	4.15	0.41
Atlantic M05	0.030	1.42	4.42	0.33

18.0^{o}N 17.5^{o}W to 18.5^{o}N 16.5^{o}W				
Atlantic M06 18.5^{o}N 16.5^{o}W to 18.8^{o}N 18.0^{o}W	0.044	1.60	4.50	0.37
Atlantic M07 18.8^{o}N 18.0^{o}W to 19.1^{o}N 16.5^{o}W	0.033	1.49	4.10	0.37
Sea of Marmara 18 40.66^{o}N 27.46^{o}W to 40.98^{o}N 28.95W	0.022	0.11	No data	No data
Southern Patagonia P1	0.07	0.722	No data	No data
Southern Patagonia P2	0.086	0.520	No data	No data
Southern Patagonia P3	0.099	0.4468	No data	No data
Mean[1]	0.038	0.868		
Low[2]	0.018	0.426		
High[2]	0.081	1.76		

[1]Logarithmic Mean for FeA and FeD,

[2]Low and high values for FeA and FeD derived from the logarithmic standard deviation.

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