



Supplement of

Enrichment of trace metals from acid sulfate soils in sediments of the Kvarken Archipelago, eastern Gulf of Bothnia, Baltic Sea

Joonas J. Virtasalo et al.

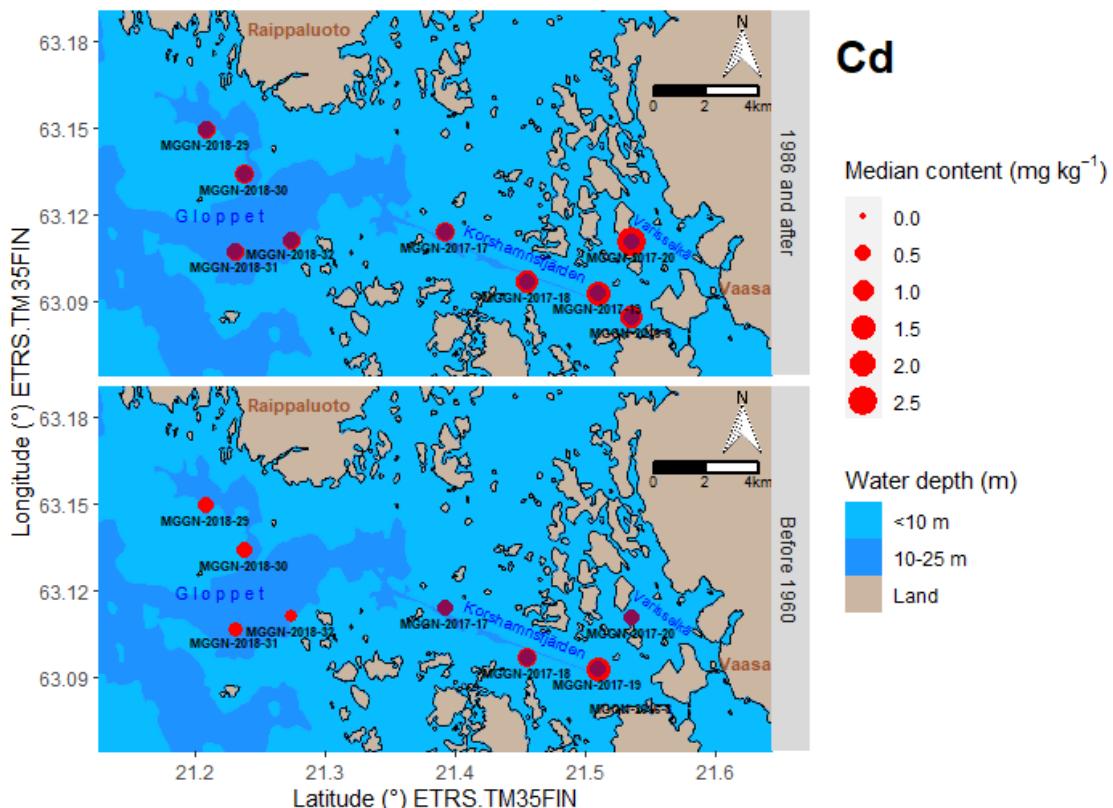
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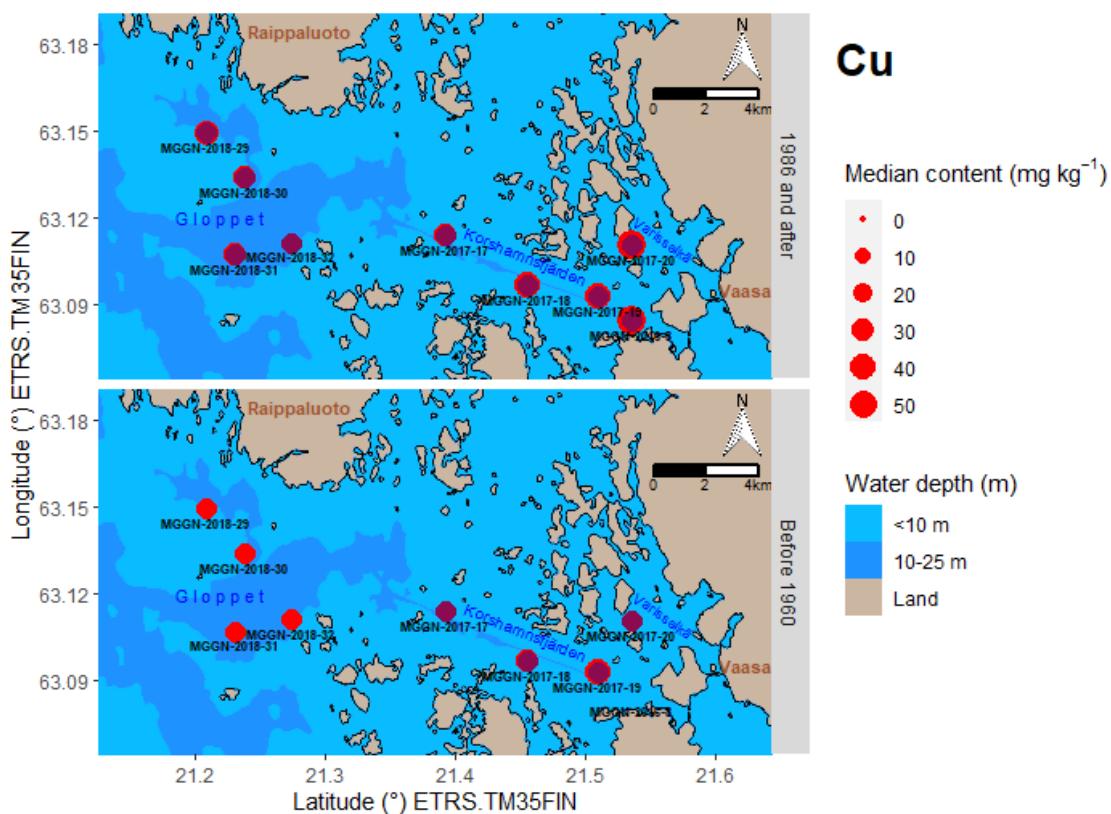
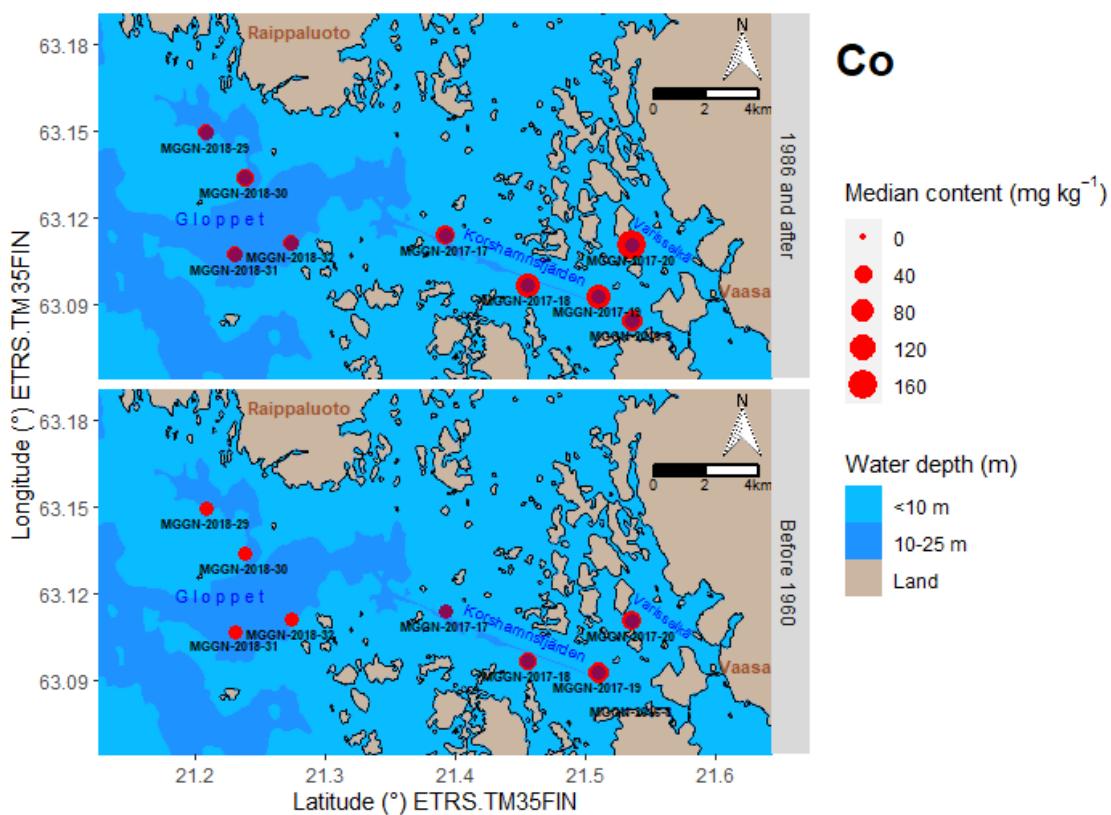
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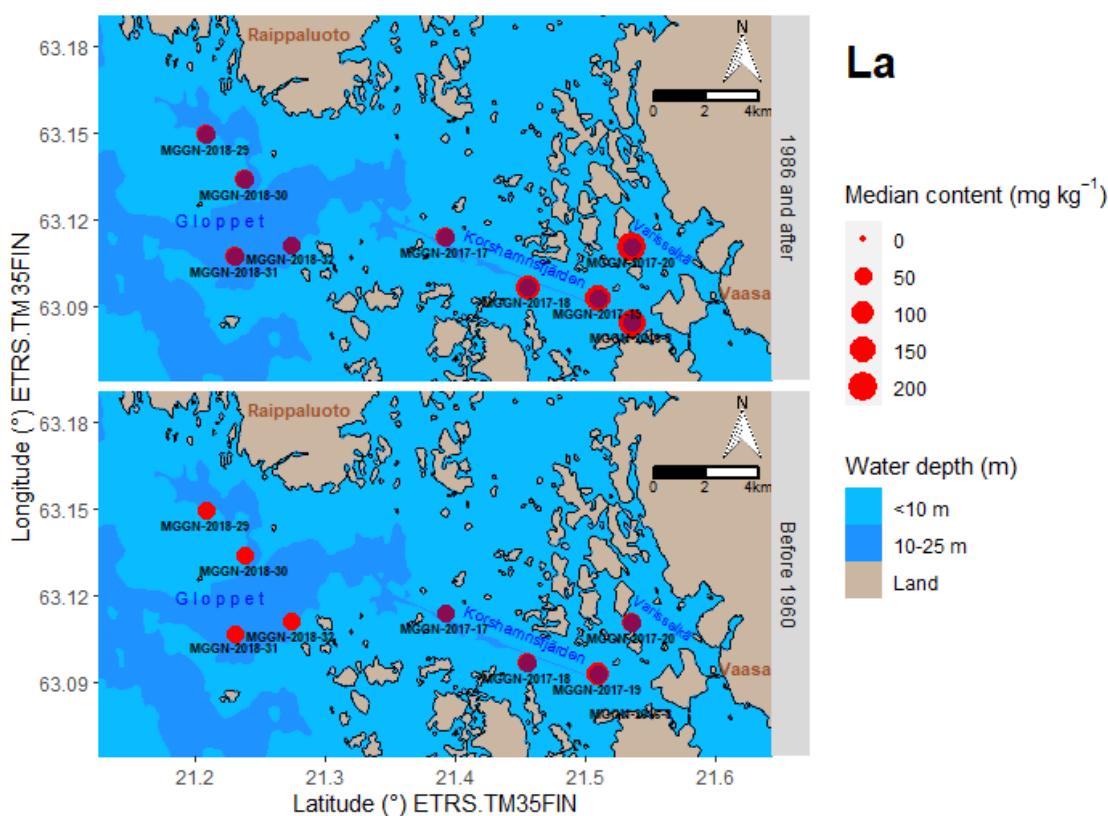
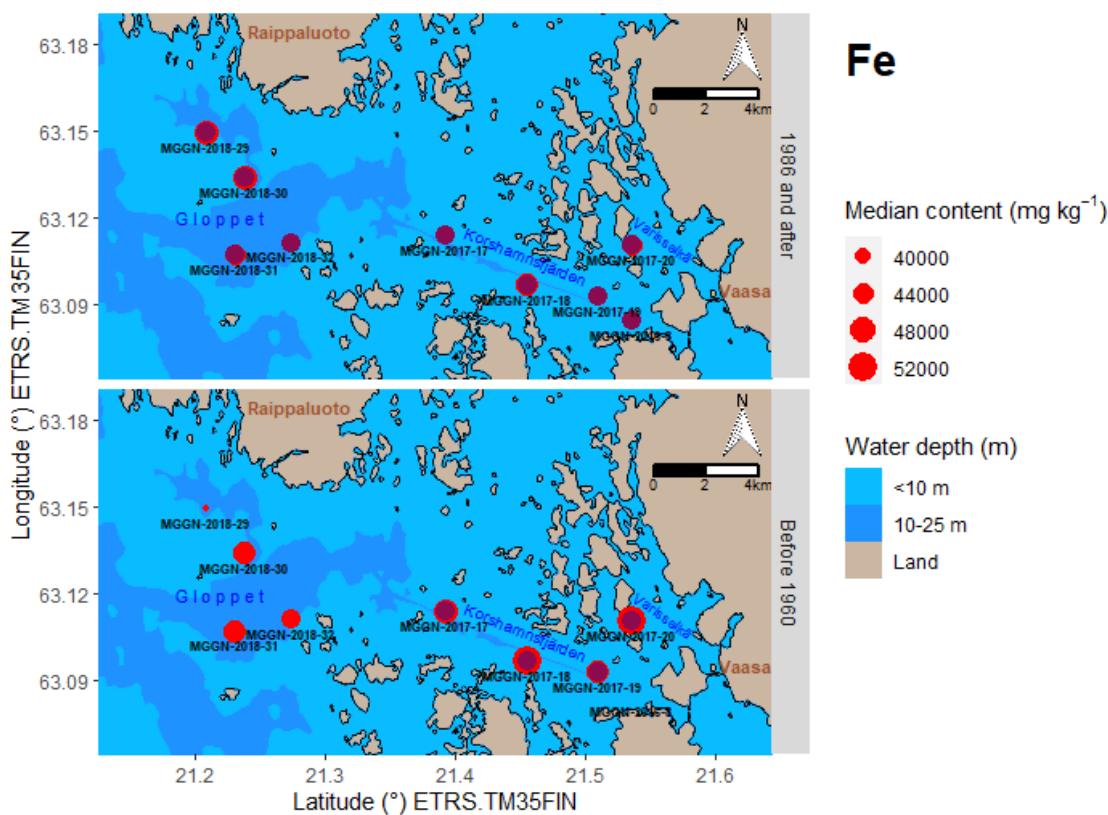
This document contains growing symbol maps, used for the visualization of spatial patterns of Cd, Co, Cu, Fe, La, and Zn contents in the < 63 µm grain size fraction of core sections deposited before the year 1960 (lower panels) and in 1986 and after (upper panels). Bright red dots indicate median contents, whereas the dark red dots indicate mean median contents in the pre-1960 sections of four cores from the Gloppet area (MGGN-2018-29, MGGN-2018-30, MGGN-2018-31, and MGGN-2018-32) in order to highlight the magnitude of enrichment. Note that core MGGN-2016-8 does not contain sediments deposited before 1960. Source: nautical chart – Finnish Transport Agency, 2017.

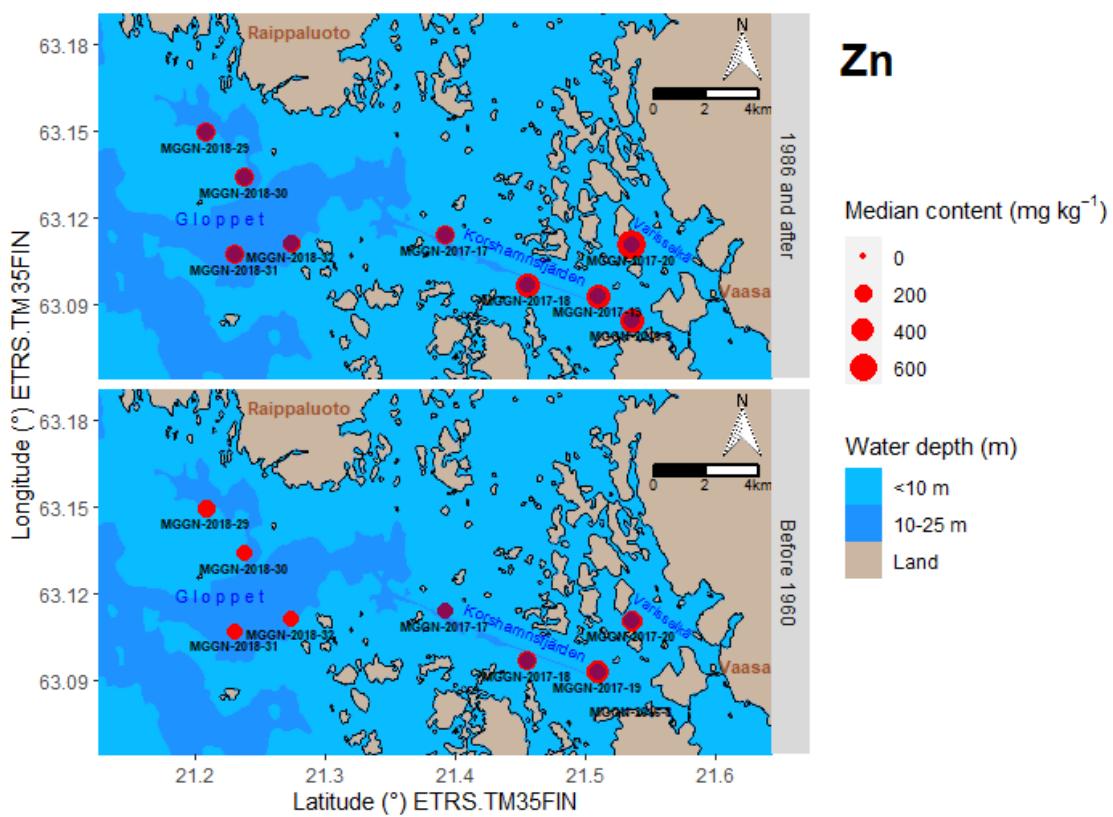
This document also contains images of the lengthwise split surfaces of the studied sediment cores, supplemented with total (organic) C contents, ^{137}Cs activity contents, and median grain size diameters and the shares of the 2–6 µm grain size class. Grain size was not determined for cores MGGN-2017-17, -18, -19 and -20.

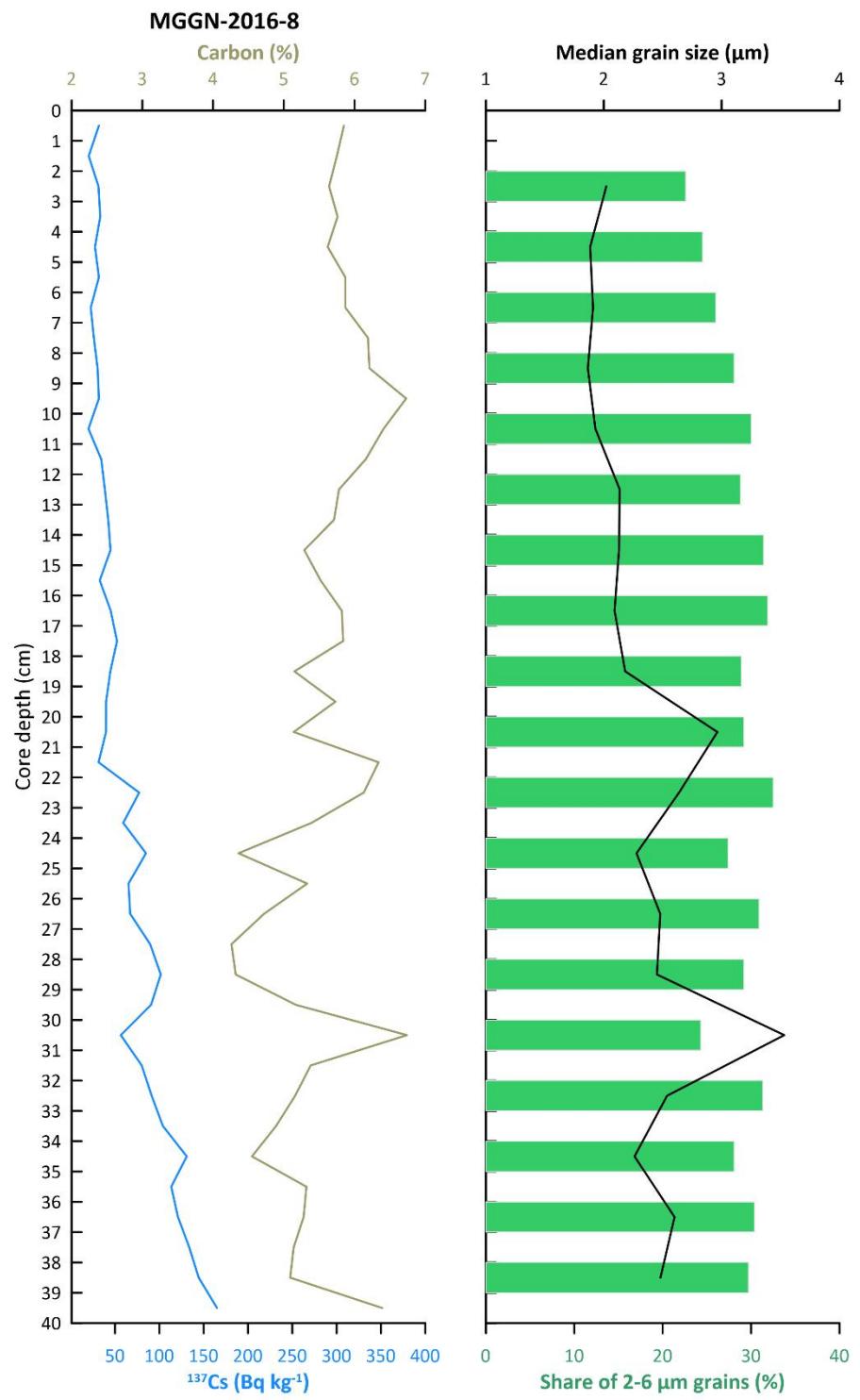
Finally, this document shows the experimental precision of chemical analysis, as determined by the standard deviations of duplicate analyses of selected sediment samples.

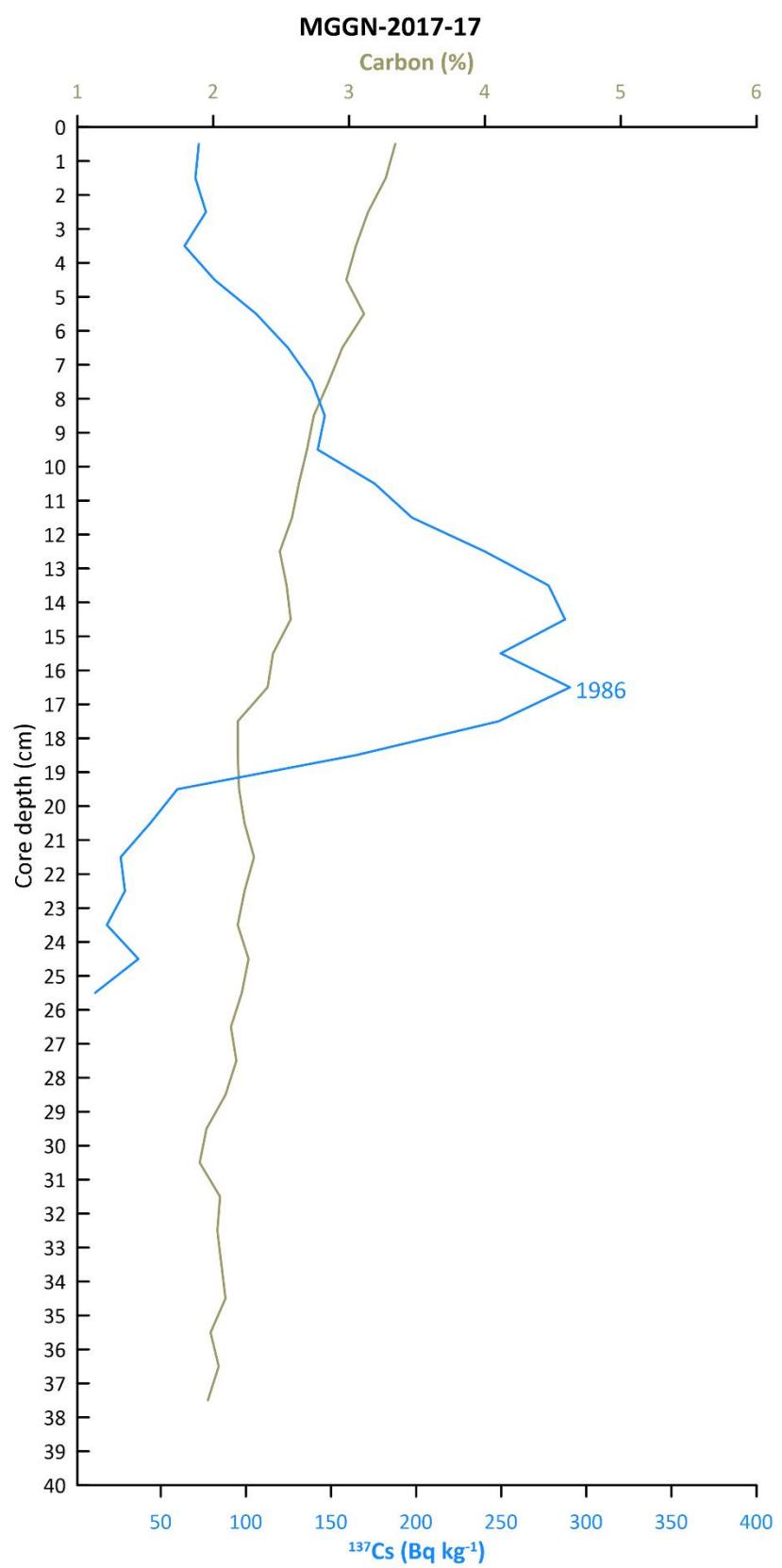


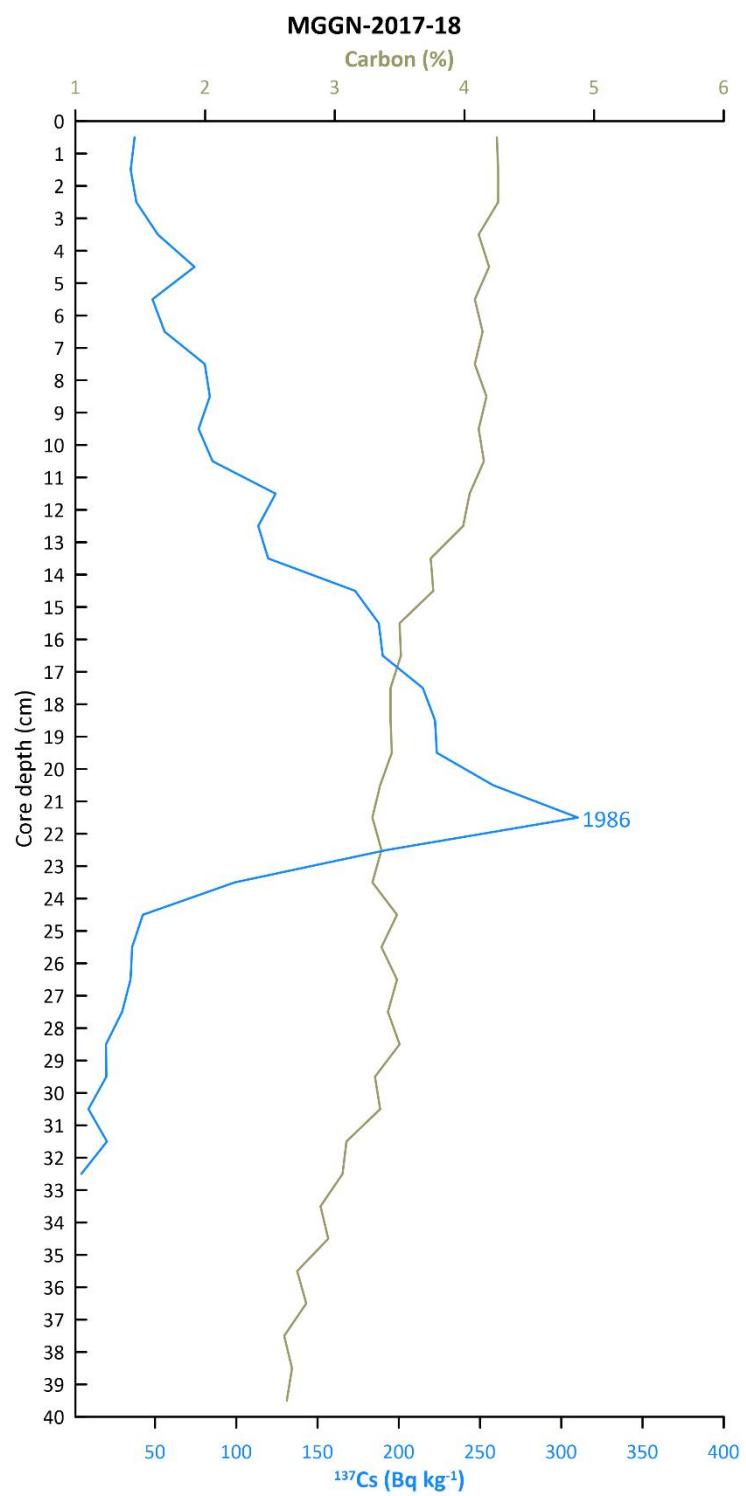


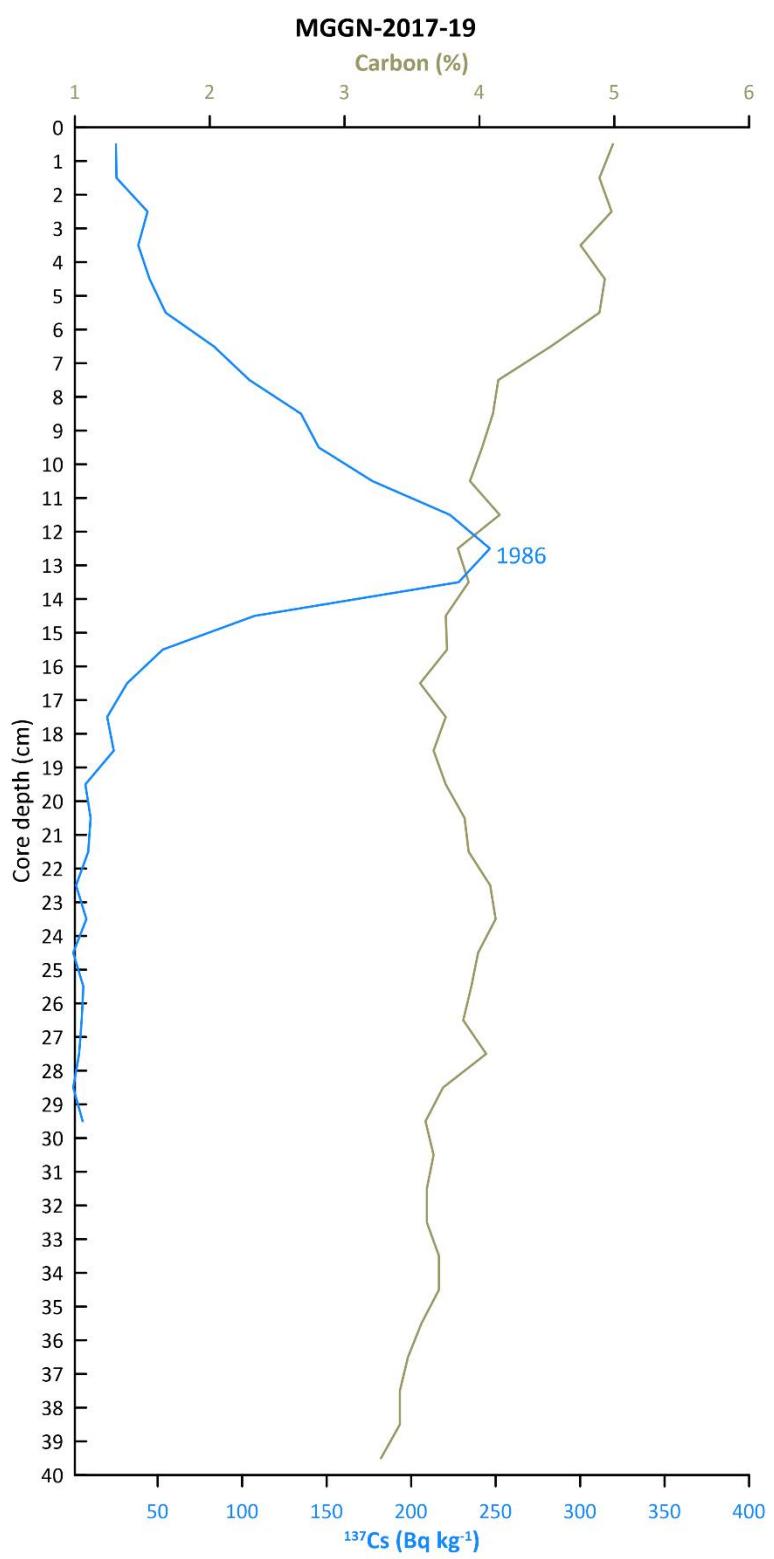


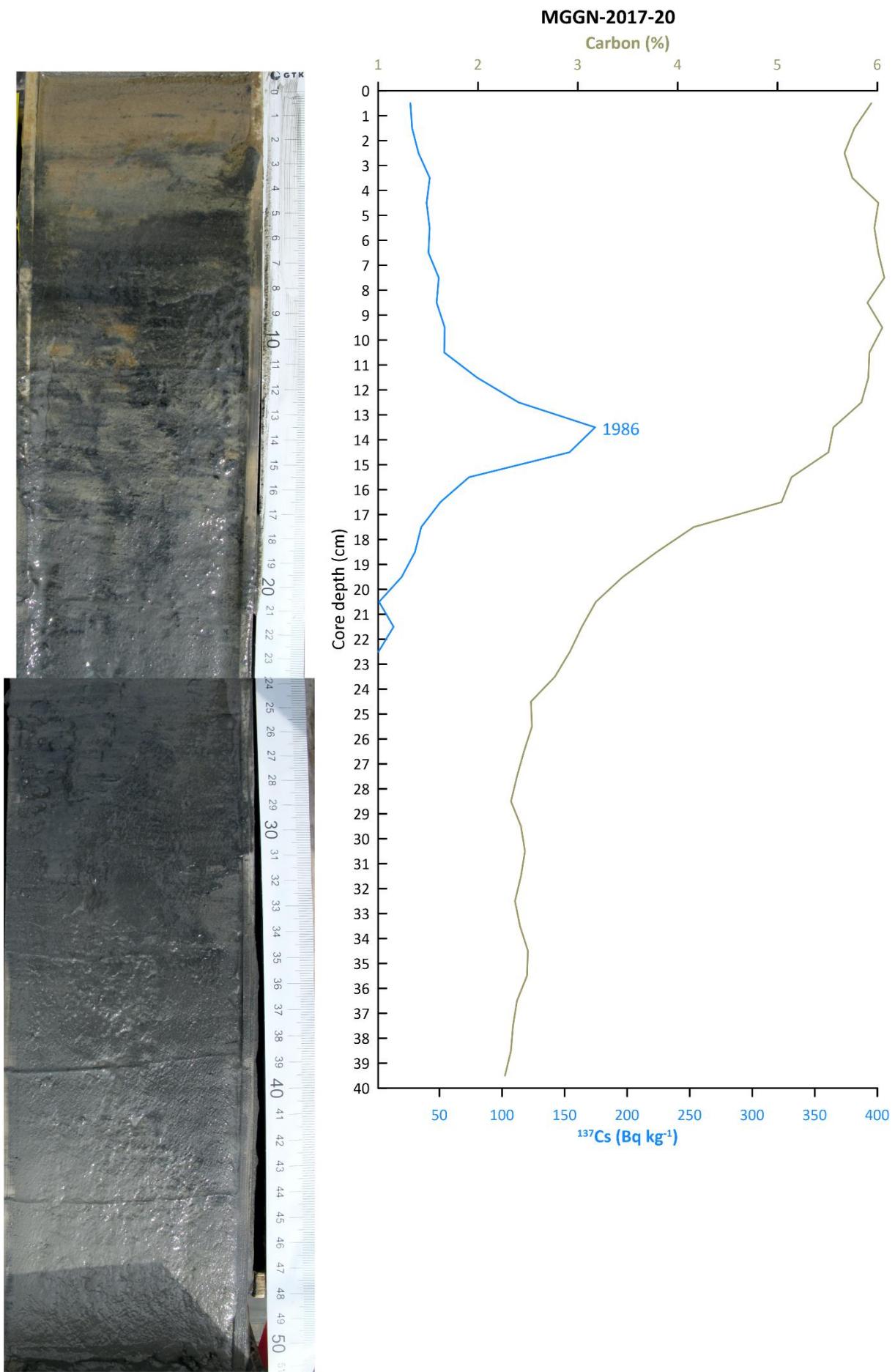


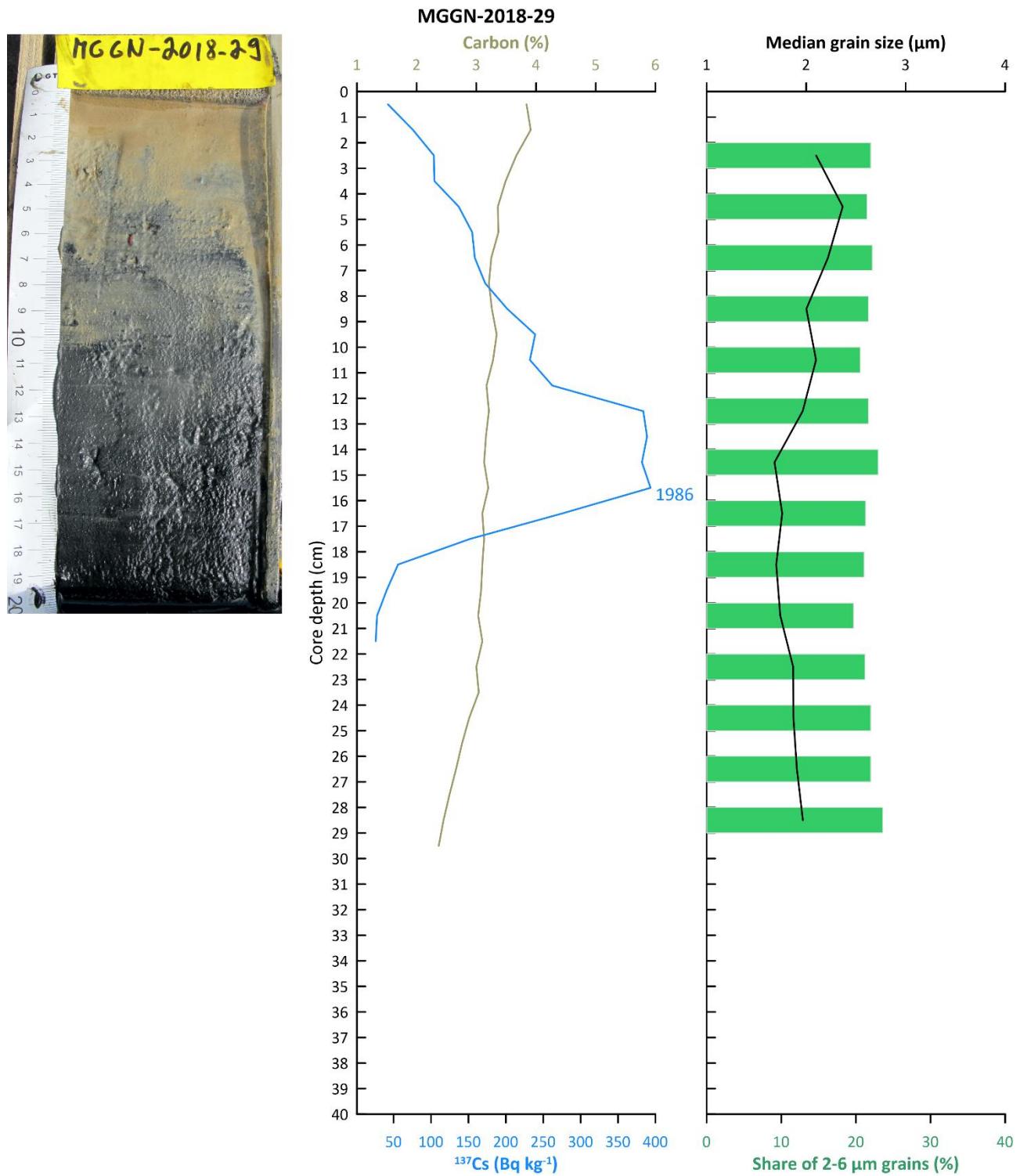


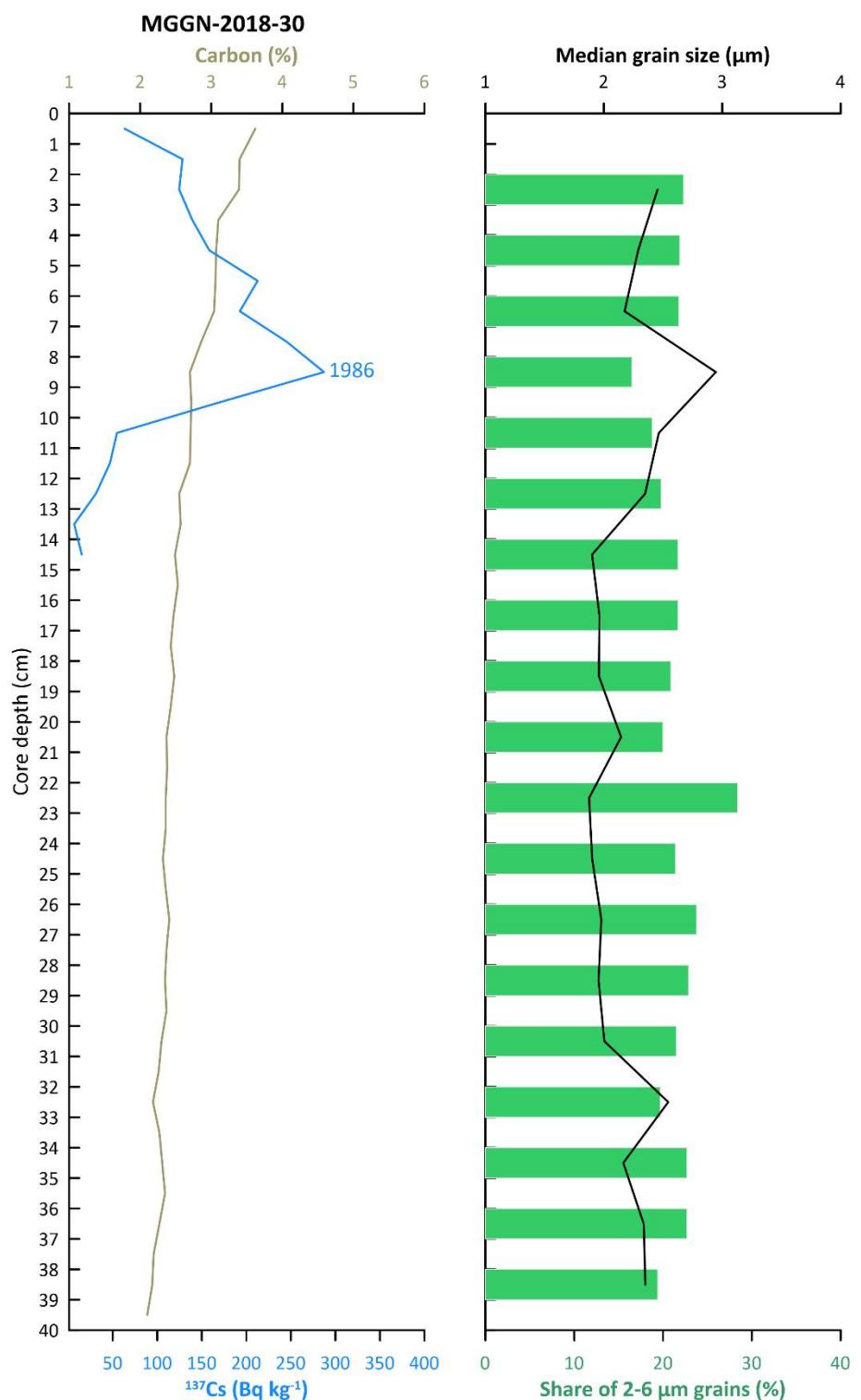


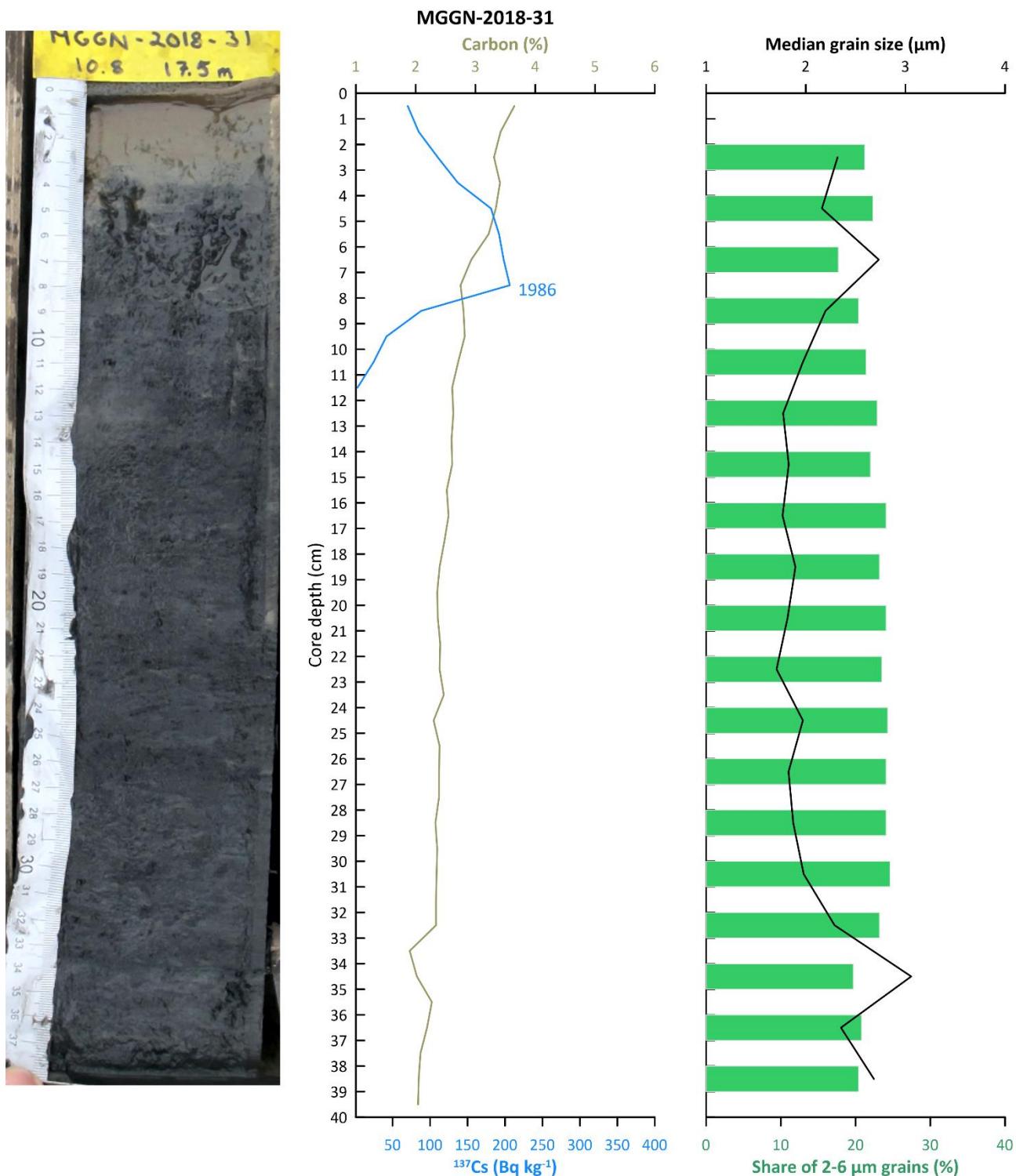


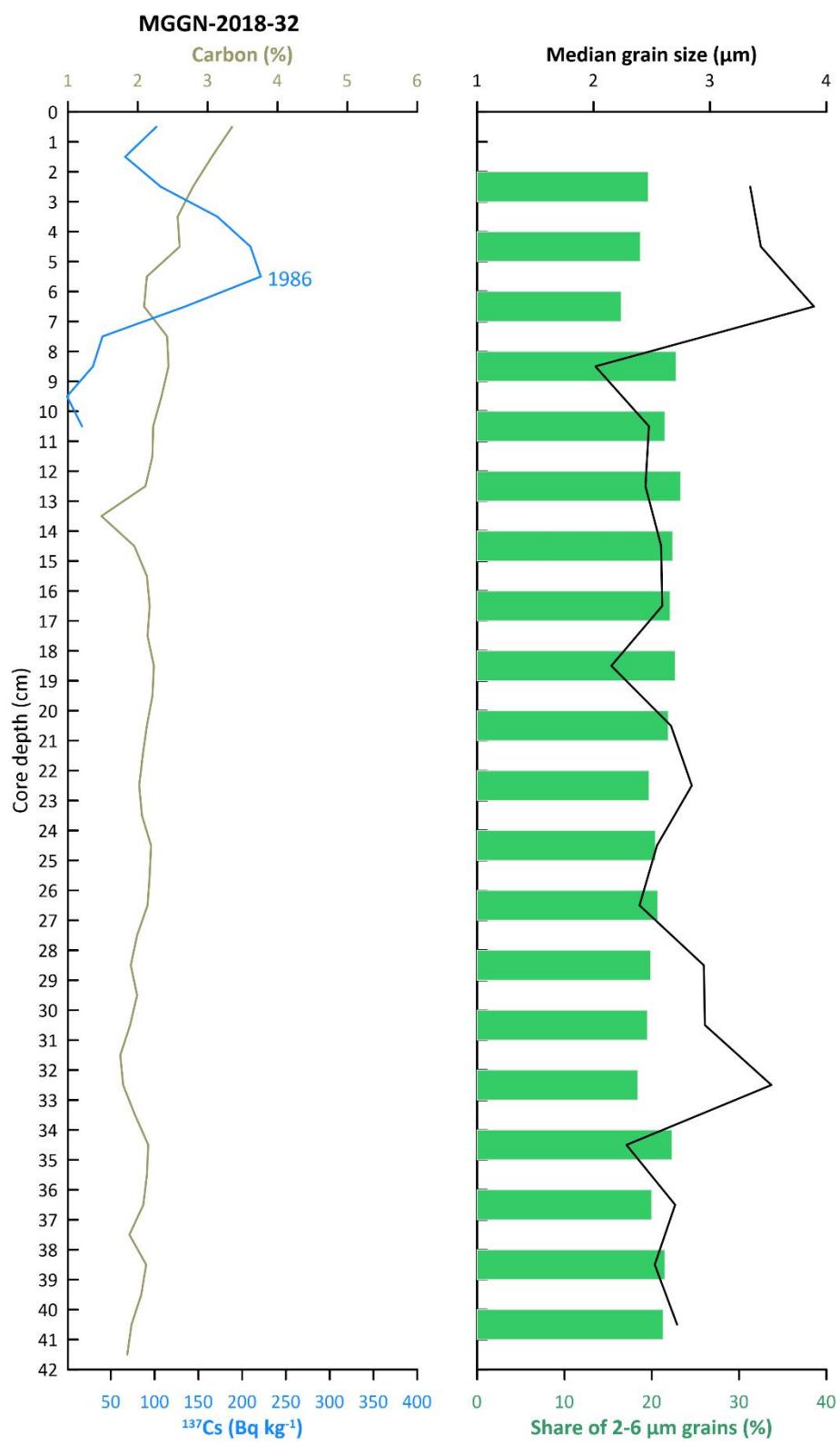












Experimental precision, determined as the standard deviations of duplicate analyses of selected samples.

	MGGN- 2016-8, 0-1 cm	MGGN- 2016-8, 37-38 cm	MGGN- 2017-8, 0-1 cm	MGGN- 2017-17, 2-3 cm	MGGN- 2017-17, 37-38 cm	MGGN- 2017-18, 4-5 cm	MGGN- 2017-18, 37-38 cm	MGGN- 2017-19, 6-7 cm	MGGN- 2017-19, 35-36 cm	MGGN- 2017-20, 8-9 cm	MGGN- 2017-20, 33-34 cm	MGGN- 2018-29, 28-29 cm	MGGN- 2018-29, 29-30 cm	MGGN- 2018-30, 37-38 cm	MGGN- 2018-31, 2-3 cm	MGGN- 2018-31, 35-36 cm	MGGN- 2018-32, 4-5 cm	MGGN- 2018-32, 33-34 cm	Mean
Ag	0.01	0.04	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.08	0.00	0.01	0.00	0.01	0.00	0.01
Bi	0.02	0.02	0.04	0.00	0.00	0.01	0.01	0.01	0.09	0.00	0.05	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01
Cd	0.01	0.02	0.01	0.00	0.01	0.04	0.00	0.06	0.01	0.00	0.04	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Ce	2.2	7.0	1.4	0.0	1.4	0.7	4.2	4.9	2.1	0.0	4.2	0.7	0.7	0.7	0.7	0.0	2.1	0.0	1.8
Dy	0.07	0.07	0.11	0.04	0.09	0.07	0.31	0.14	0.14	0.07	0.12	0.06	0.05	0.01	0.02	0.00	0.11	0.01	0.08
Er	0.00	0.06	0.11	0.01	0.04	0.01	0.16	0.00	0.00	0.14	0.08	0.02	0.04	0.01	0.03	0.02	0.06	0.00	0.04
Eu	0.01	0.01	0.03	0.01	0.01	0.01	0.06	0.04	0.04	0.01	0.03	0.01	0.01	0.01	0.02	0.00	0.04	0.01	0.02
Gd	0.08	0.10	0.14	0.07	0.09	0.14	0.21	0.28	0.14	0.07	0.14	0.05	0.07	0.03	0.05	0.07	0.10	0.01	0.10
Hf	0.06	0.01	0.06	0.00	0.08	0.02	0.16	0.01	0.04	0.01	0.07	0.06	0.01	0.04	0.01	0.13	0.04	0.04	0.05
Ho	0.02	0.05	0.03	0.00	0.02	0.03	0.05	0.03	0.01	0.04	0.04	0.01	0.00	0.01	0.00	0.01	0.03	0.01	0.02
La	1.56	1.56	0.78	0.07	0.49	0.71	0.57	1.41	0.92	0.00	1.06	0.78	0.21	0.07	0.28	0.28	1.27	0.49	0.70
Lu	0.00	0.01	0.00	0.01	0.00	0.00	0.03	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Nb	0.00	0.02	0.57	0.14	0.14	0.14	0.35	0.02	0.49	0.02	0.57	0.14	0.14	0.00	0.14	0.00	0.35	0.00	0.18
Nd	1.13	0.28	1.20	0.21	0.92	0.49	1.91	0.71	1.13	0.71	0.28	0.49	0.35	0.14	0.35	0.49	0.14	0.14	0.62
Pr	0.28	0.28	0.28	0.07	0.21	0.14	0.57	0.14	0.21	0.07	0.28	0.07	0.00	0.07	0.07	0.00	0.21	0.07	0.17
Sb	0.05	0.01	0.03	0.01	0.01	0.01	0.05	0.02	0.00	0.02	0.01	0.01	0.01	0.00	0.03	0.00	0.05	0.01	0.02
Sm	0.25	0.20	0.21	0.00	0.11	0.28	0.28	0.21	0.21	0.00	0.14	0.05	0.04	0.01	0.06	0.05	0.06	0.03	0.12
Sn	1.62	0.04	0.09	0.01	0.04	0.05	0.13	0.04	0.16	0.01	0.07	0.04	0.01	0.01	0.03	0.02	0.08	0.03	0.14
Ta	0.01	0.00	0.06	0.01	0.01	0.01	0.04	0.01	0.06	0.00	0.08	0.00	0.01	0.01	0.03	0.06	0.04	0.00	0.03
Tb	0.06	0.01	0.02	0.00	0.01	0.01	0.05	0.04	0.02	0.01	0.02	0.00	0.01	0.01	0.00	0.01	0.02	0.01	0.02
Th	0.07	0.07	0.35	0.21	0.21	0.35	0.28	0.00	0.14	0.06	0.28	0.28	0.64	0.21	0.14	0.28	0.00	0.14	0.21
Tl	0.00	0.01	0.01	0.01	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.01
Tm	0.01	0.01	0.01	0.01	0.01	0.00	0.02	0.01	0.01	0.02	0.01	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
U	0.04	0.01	0.06	0.02	0.14	0.07	0.18	0.01	0.11	0.04	0.17	0.08	0.01	0.04	0.02	0.02	0.07	0.02	0.06
Yb	0.04	0.05	0.06	0.02	0.07	0.01	0.17	0.05	0.01	0.07	0.01	0.03	0.01	0.01	0.01	0.04	0.11	0.02	0.04
Al	1131	2404	495	71	354	212	141	354	566	566	1131	283	990	354	1273	212	1202	1909	758
As	2.83	1.41	4.95	0.07	1.41	0.14	2.83	0.07	1.41	0.14	0.71	0.28	1.06	0.21	0.07	0.07	0.35	0.07	1.01
Ba	2.1	0.7	4.9	0.0	1.4	0.7	0.7	2.1	3.5	2.8	10.6	1.4	4.2	4.9	5.7	3.5	0.7	20.5	3.93
Be	0.07	0.14	0.07	0.07	0.07	0.00	0.00	0.07	0.07	0.07	0.21	0.14	0.07	0.14	0.00	0.00	0.07	0.07	0.07
Ca	64	283	71	0	71	141	71	141	71	141	354	0	71	71	141	0	141	283	117
Co	0.14	1.20	1.77	0.35	0.14	0.49	0.57	2.12	4.10	1.41	2.47	0.07	0.71	0.14	0.35	0.21	0.14	0.78	0.95

Cr	2.12	0.71	0.71	0.71	2.12	1.41	0.71	1.41	5.66	1.41	1.41	1.41	1.41	2.12	1.41	0.00	0.71	2.83	1.57
Cu	0.71	0.00	0.71	0.00	0.71	0.00	0.00	1.41	0.71	0.00	0.71	0.00	0.71	0.00	0.71	0.71	1.41	1.41	0.51
Fe	212	71	424	141	283	71	495	71	354	141	707	0	212	141	354	71	919	1273	330
K	0	0	141	0	0	141	354	141	212	212	495	141	212	212	424	141	636	1061	251
Li	0.71	0.00	0.71	0.71	0.71	0.71	0.00	2.12	0.00	0.00	0.71	2.12	0.71	2.12	1.41	1.41	2.83	0.94	
Mg	71	71	0	0	141	141	141	71	0	0	71	71	71	0	71	0	354	424	94
Mn	7.1	7.1	183.8	21.2	7.1	134.4	21.2	120.2	212.1	99.0	240.4	3.5	9.9	2.1	14.1	1.4	11.3	26.9	62.4
Na	71	71	141	71	71	141	141	71	71	141	495	0	141	141	283	71	283	495	161
Ni	0.71	0.71	2.12	0.71	0.00	0.00	4.95	2.12	0.71	2.12	2.12	0.71	0.71	0.71	1.41	0.00	1.41	1.41	1.26
P	7.1	14.1	0.0	7.1	11.3	7.1	7.1	7.1	35.4	14.1	28.3	5.7	6.4	9.2	0.0	5.7	14.1	45.3	12.5
Pb	0.00	0.71	0.71	2.12	2.12	0.71	0.71	1.41	1.41	0.71	0.00	1.41	0.71	0.00	0.00	0.71	3.54	1.41	1.02
Rb	0.71	0.00	1.41	0.71	1.41	0.00	2.83	0.00	2.12	0.71	0.00	2.12	0.00	0.71	1.41	0.00	4.95	3.54	1.26
S	184	71	21	7	283	7	283	21	14	57	354	92	226	134	14	21	64	311	120
Sc	0.14	0.14	0.07	0.07	0.07	0.07	0.14	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.14	0.07	0.35	0.42	0.12
Sr	1.4	0.7	1.4	0.0	1.4	1.4	0.0	0.7	0.0	2.1	4.9	0.0	1.4	0.7	2.8	0.7	1.4	5.7	1.5
Ti	21	7	28	14	7	0	21	14	21	28	49	0	35	7	57	7	127	163	34
V	0.14	0.07	1.06	0.07	0.64	0.07	0.28	0.64	1.91	0.49	1.91	0.49	1.20	0.14	0.71	0.71	2.26	3.25	0.89
Y	0.71	0.00	0.21	0.28	0.14	0.14	0.49	0.00	0.57	0.71	0.28	0.35	0.00	0.14	0.00	0.21	1.27	1.06	0.37
Zn	1.4	2.1	0.7	0.0	25.5	0.7	3.5	2.1	9.2	5.7	4.2	0.7	2.1	1.4	1.4	0.7	5.7	7.1	4.1
Zr	0.3	0.6	1.4	0.7	1.4	0.9	0.7	0.8	0.7	1.6	3.5	2.8	3.5	2.1	0.7	3.5	1.4	4.2	1.7
Mo	<2	0.07	0.35	<2	0.05	<2	0.08	0.07	0.69	0.07	0.32	<2	<2	<2	<2	0.14	<2	0.20	
Hg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
C	0.04	0.01	0.00	0.03	0.01	0.01	0.01	0.01	0.14	0.04	0.00	0.01	0.01	0.04	0.01	0.01	0.00	0.01	0.02
N	0.06	0.01	0.04	0.01	0.03	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.01

Element contents are in mg kg⁻¹ except C and N are in percentage (%) dry weight.