

Supplementary Information

Evaluating Sedimentation Rates in the Estuary and Shelf Region of the Paraíba do Sul River, Southeastern Brazil

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Table S1. Total and excess ²¹⁰Pb for 1N core

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
1	0.19	62.4	0.74	–	–	–	–
2	0.55	80.7	1.0	11.9	6.12	4.21	0.34
3	0.98	65.0	0.77	–	–	–	–
4	1.47	52.4	0.62	–	–	–	–
5	1.95	53.9	0.64	–	–	–	–
6	2.43	57.2	0.48	–	–	–	–
7	2.81	60.4	0.72	–	–	–	–
8	3.29	63.3	0.53	–	–	–	–
9	3.75	66.3	0.79	–	–	–	–
10	4.21	63.3	0.53	–	–	–	–
11	4.70	60.3	0.72	–	–	–	–
12	5.16	56.6	0.48	–	–	–	–
13	5.70	52.9	0.63	–	–	–	–
14	6.20	54.3	0.46	–	–	–	–
15	6.63	55.7	0.66	–	–	–	–
16	7.08	55.7	0.47	–	–	–	–
17	7.59	55.6	0.66	–	–	–	–
18	8.03	59.3	0.50	–	–	–	–
19	8.49	62.9	0.75	–	–	–	–
20	9.05	63.8	0.54	–	–	–	–
21	9.56	64.7	0.77	–	–	–	–
22	10.1	70.1	0.59	1.28	–	–	–
23	10.5	75.5	0.90	6.67	6.11	3.10	0.42
24	11.0	86.4	0.73	17.6	6.08	7.69	0.32
25	11.4	97.4	1.16	28.6	6.15	12.75	0.52
26	11.8	93.2	0.78	24.4	6.09	10.69	0.34
27	12.3	89.1	1.06	20.2	6.13	9.31	0.49
28	12.8	89.3	0.75	20.5	6.09	9.32	0.34
29	13.2	89.6	1.06	20.8	6.13	9.95	0.51

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Table S1. continuation

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
30	13.7	88.4	0.74	19.6	6.09	9.02	0.34
31	14.2	87.2	1.04	18.4	6.13	8.78	0.49
32	14.6	90.8	0.76	21.9	6.09	9.86	0.34
33	15.1	94.3	1.12	25.5	6.14	11.97	0.53
34	15.6	90.3	0.76	21.5	6.09	10.44	0.37
35	16.1	86.3	1.03	17.4	6.13	8.31	0.49
36	16.5	76.0	0.64	7.14	6.07	–	–
37	17.0	65.7	0.78	–	–	–	–
38	17.5	67.0	0.56	–	–	–	–
39	17.9	68.4	0.81	–	–	–	–
40	18.4	67.3	0.57	–	–	–	–
41	18.9	66.2	0.79	–	–	–	–
42	19.4	74.8	0.63	–	–	–	–
43	19.9	83.3	0.99	14.51	6.12	6.83	0.47
44	20.4	87.3	0.73	18.44	6.08	8.95	0.36
45	20.8	91.2	1.08	22.37	6.14	10.45	0.51
46	21.3	86.9	0.73	18.07	6.08	7.88	0.32
47	21.7	82.6	0.98	13.77	6.12	5.96	0.42
48	22.2	72.9	0.87	–	–	–	–
49	22.6	72.0	0.86	–	–	–	–
50	23.1	66.7	0.79	–	–	–	–
51	23.6	73.4	0.87	–	–	–	–
52	24.1	59.1	0.70	–	–	–	–

Table S2. Total and excess ²¹⁰Pb for 3S core

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
1	0.23	83.9	1.0	56.1	2.8	13.1	0.66
2	0.52	80.1	0.95	52.3	2.8	15.2	0.82
3	0.93	67.3	0.80	39.5	2.8	15.9	1.1
4	1.33	52.4	0.62	24.6	2.7	10.0	1.1
5	1.77	46.6	0.55	18.8	2.7	8.32	1.2
6	2.21	53.1	0.45	25.3	2.7	10.9	1.2
7	2.64	59.6	0.71	31.8	2.7	13.8	1.2
8	3.08	58.9	0.50	31.2	2.7	13.6	1.2
9	3.54	58.3	0.69	30.5	2.7	14.1	1.3
10	4.04	59.1	0.50	31.3	2.7	15.8	1.4
11	4.59	59.8	0.71	32.1	2.7	17.5	1.5
12	5.09	62.6	0.53	34.8	2.7	17.3	1.3
13	5.60	65.3	0.78	37.5	2.8	19.0	1.4
14	6.15	66.3	0.56	38.6	2.7	21.3	1.5
15	6.71	67.4	0.80	39.6	2.8	22.3	1.6
16	7.23	63.2	0.53	35.5	2.7	18.4	1.4
17	7.77	59.1	0.70	31.3	2.7	16.8	1.5
18	8.30	61.0	0.51	33.2	2.7	17.5	1.4
19	8.87	62.9	0.75	35.1	2.7	20.0	1.6
20	9.49	60.4	0.51	32.7	2.7	20.5	1.7
21	10.1	58.0	0.69	30.2	2.7	18.5	1.7
22	10.7	51.7	0.44	23.9	2.7	15.4	1.7
23	11.4	45.3	0.54	17.6	2.7	10.8	1.7
24	12.0	47.0	0.40	19.3	2.7	11.5	1.6

Table S2. continuation

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
25	12.6	48.7	0.58	21.0	2.7	13.0	1.7
26	13.3	51.5	0.43	23.7	2.7	16.8	1.9
27	13.9	54.3	0.65	26.5	2.7	15.7	1.6
28	14.5	52.5	0.44	24.7	2.7	15.6	1.7
29	15.1	50.7	0.60	22.9	2.7	13.3	1.6
30	15.7	53.4	0.63	25.6	2.7	15.1	1.6
31	16.3	39.9	0.47	12.2	2.7	7.55	1.7
32	17.0	34.7	0.41	6.92	2.7	4.58	1.8
33	17.6	29.6	0.35	–	–	–	–
34	18.2	25.9	0.31	–	–	–	–

Table S3. Total and excess ²¹⁰Pb for 1S core

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
1	0.36	78.8	0.94	52.9	3.10	19.2	1.1
2	0.57	66.5	0.79	40.5	3.06	8.4	0.6
3	0.83	58.9	0.70	33.0	3.03	8.7	0.8
4	1.23	51.9	0.62	26.0	3.02	10.4	1.2
5	1.61	64.7	0.77	38.8	3.05	14.8	1.2
6	1.98	66.9	0.56	40.9	3.00	14.9	1.1
7	2.41	69.0	0.82	43.0	3.06	18.8	1.3
8	2.87	62.0	0.52	36.1	3.00	16.4	1.4
9	3.28	55.0	0.65	29.1	3.02	11.9	1.2
10	3.69	62.8	0.53	36.8	3.00	15.2	1.2
11	4.12	70.5	0.84	44.6	3.07	19.1	1.3
12	4.61	72.1	0.61	46.1	3.01	22.8	1.5
13	5.02	73.6	0.88	47.7	3.08	19.4	1.3
14	5.48	77.6	0.65	51.7	3.02	23.9	1.4
15	5.96	81.6	0.97	55.6	3.11	26.6	1.5
16	6.54	73.2	0.62	47.3	3.02	27.3	1.7
17	7.15	64.8	0.77	38.9	3.05	23.9	1.9
18	7.79	63.6	0.53	37.7	3.00	24.2	1.9
19	8.42	62.4	0.74	36.5	3.04	22.9	1.9
20	8.95	61.8	0.52	35.9	3.00	18.9	1.6
21	9.44	61.2	0.73	35.2	3.04	17.3	1.5
22	9.94	62.6	0.53	36.7	3.00	18.4	1.5
23	10.5	64.1	0.76	38.1	3.05	20.5	1.6
24	11.0	62.1	0.52	36.2	3.00	18.2	1.5
25	11.5	60.1	0.71	34.2	3.04	16.4	1.5
26	11.9	72.8	0.62	46.9	3.02	21.2	1.4
27	12.4	85.5	1.02	59.5	3.12	31.8	1.7
28	12.9	79.5	0.67	53.6	3.03	26.2	1.5
29	13.4	73.6	0.87	47.6	3.08	22.2	1.4
30	13.9	76.7	0.64	50.8	3.02	27.1	1.6
31	14.5	79.8	0.95	53.9	3.10	29.3	1.7
32	15.1	71.3	0.60	45.3	3.01	28.7	1.9
33	15.8	62.7	0.74	36.8	3.04	25.1	2.1
34	16.7	61.2	0.51	35.3	3.00	30.6	2.6
35	17.3	59.8	0.71	33.8	3.04	22.6	2.0
36	18.4	55.0	0.46	29.1	2.99	31.5	3.2

Table S3. continuation

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
37	19.3	50.3	0.60	24.4	3.01	22.2	2.7
38	20.1	73.7	0.65	47.8	3.02	35.8	2.3
39	20.7	97.2	1.15	71.2	3.17	43.3	1.9
40	21.4	90.9	0.77	65.0	3.05	46.6	2.2
41	22.1	84.6	1.01	58.7	3.12	42.4	2.3
42	22.8	91.5	0.77	65.6	3.05	43.4	2.0
43	23.4	98.5	1.17	72.5	3.17	46.3	2.0
44	24.0	87.3	0.74	61.4	3.04	37.5	1.9
45	24.6	76.2	0.91	50.3	3.09	27.5	1.7
46	25.6	67.6	0.57	41.7	3.01	42.3	3.0
47	26.3	59.0	0.70	33.1	3.03	23.5	2.2
48	27.0	58.2	0.69	32.3	3.03	22.1	2.1
49	27.7	59.4	0.71	33.5	3.03	22.6	2.0
50	28.2	61.9	0.74	36.0	3.04	18.4	1.6
51	28.8	65.4	0.78	39.5	3.05	25.1	1.9

Table S4. Total and excess ²¹⁰Pb for 2N core

Depth / cm	Cumulative mass / (g cm ⁻²)	²¹⁰ Pb total / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (Bq kg ⁻¹)	Error	²¹⁰ Pb _{exc} / (mBq cm ⁻²)	Error
1	0.25	88.1	1.1	58.1	3.4	14.6	0.26
2	0.63	107	1.3	77.3	3.5	29.6	0.49
3	1.08	132	1.6	102	3.6	45.3	0.70
4	1.44	120	1.4	90.2	3.5	32.9	0.52
5	1.80	116	1.4	86.0	3.5	31.0	0.50
6	2.18	95.1	0.82	65.1	3.3	24.2	0.30
7	2.60	74.3	0.88	44.3	3.3	18.8	0.37
8	3.00	64.3	0.55	34.3	3.3	13.8	0.22
9	3.42	54.3	0.65	24.3	3.3	10.2	0.27
10	3.82	59.7	0.50	29.7	3.3	11.6	0.20
11	4.24	65.2	0.77	35.2	3.3	14.9	0.33
12.5	4.93	63.9	0.53	33.9	3.3	23.3	0.37
13	5.19	62.5	0.74	32.5	3.3	8.56	0.19
14	5.71	58.1	0.49	28.1	3.3	14.6	0.25
15	6.36	53.6	0.64	23.6	3.3	15.3	0.42
16	6.82	98.5	0.91	68.5	3.4	31.7	0.42
17	7.30	143	1.7	113	3.7	54.3	0.81
18	7.74	139	1.2	109	3.4	47.3	0.51
19	8.05	135	1.6	105	3.6	32.8	0.50
20	8.50	130	1.1	100	3.4	45.7	0.50
21	9.00	125	1.5	95.0	3.6	46.7	0.74
22	9.33	122	1.0	92.2	3.4	30.5	0.34
23	9.62	119	1.4	89.3	3.5	25.9	0.41
24	9.98	102	0.87	72.4	3.3	26.1	0.31
25	10.3	85.4	1.01	55.4	3.4	18.4	0.34
26	10.7	78.4	0.66	48.4	3.3	18.8	0.26
27	11.1	71.5	0.85	41.5	3.3	15.1	0.31
28	11.4	65.8	0.55	35.8	3.3	13.2	0.20
29	11.9	60.1	0.71	30.1	3.3	12.9	0.31
30	12.3	71.4	0.85	41.4	3.3	19.0	0.39
31	12.8	58.6	0.70	28.6	3.3	14.2	0.39
32	13.3	56.0	0.67	26.0	3.3	12.6	0.35
33	13.8	55.3	0.66	25.3	3.3	13.4	0.32
34	14.3	62.4	0.74	32.4	3.3	16.0	0.35

Table S5. Total and excess ^{210}Pb for 3SS core

Depth / cm	Cumulative mass / (g cm^{-2})	^{210}Pb total / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm^{-2})	Error
1	0.44	79.1	0.94	52.8	2.5	23.0	1.1
2	0.94	86.2	1.0	59.9	2.5	29.9	1.3
3	1.36	95.3	1.1	69.0	2.6	28.7	1.1
4	1.76	105	1.2	78.5	2.6	31.7	1.1
5	2.22	108	1.3	81.7	2.6	37.5	1.2
6	2.63	106	0.89	79.6	2.5	32.6	1.0
7	3.15	104	1.2	77.5	2.6	40.8	1.4
8	3.62	86.7	0.74	60.5	2.4	28.2	1.1
9	4.00	69.7	0.83	43.5	2.4	16.3	0.92
10	4.41	74.6	0.63	48.4	2.4	19.9	0.98
11	4.81	79.5	0.95	53.3	2.5	21.4	1.0
12	5.22	81.8	0.69	55.6	2.4	22.9	0.99
13	5.93	84.1	1.0	57.9	2.5	40.9	1.8
14	6.39	91.8	0.77	65.6	2.4	30.2	1.1
15	6.84	99.5	1.2	73.3	2.6	32.9	1.2
16	7.21	84.2	0.72	58.0	2.4	21.7	0.90
17	7.66	68.9	0.82	42.7	2.4	19.1	1.1
18	8.12	79.4	0.67	53.2	2.4	24.6	1.1
19	8.55	89.9	1.1	63.6	2.5	27.3	1.1
20	9.03	90.7	0.76	64.5	2.4	31.1	1.2
21	9.43	91.5	1.1	65.3	2.5	26.2	1.0
22	9.84	87.3	0.73	61.1	2.4	24.7	0.98
23	10.3	83.2	0.99	56.9	2.5	23.9	1.1
24	10.7	81.8	0.69	55.6	2.4	27.2	1.2
25	11.1	80.5	0.96	54.2	2.5	17.3	0.80
26	11.5	95.8	0.82	69.6	2.4	31.8	1.1
27	11.9	111	1.3	85.0	2.7	33.8	1.1
28	12.4	119	1.0	92.3	2.5	44.8	1.2
29	12.8	126	1.5	99.6	2.7	43.5	1.2
30	13.3	100	0.87	73.9	2.5	30.1	1.0
31	13.8	74.5	0.89	48.3	2.5	25.8	1.3
32	14.3	68.3	0.58	42.0	2.4	23.0	1.3
33	14.9	62.0	0.74	35.8	2.4	21.9	1.5
34	15.5	61.5	0.52	35.3	2.4	18.8	1.3
35	15.9	61.0	0.72	34.7	2.4	15.9	1.1
36	16.5	44.5	0.40	18.3	2.3	10.6	1.4
37	17.1	28.0	0.33	1.79	2.3	1.06	1.37
38	17.7	26.7	0.22	–	–	–	–
39	18.3	25.4	0.30	–	–	–	–
40	18.9	25.1	0.21	–	–	–	–
41	19.4	24.8	0.29	–	–	–	–
42	20.1	26.0	0.22	–	–	–	–
43	20.7	27.2	0.32	–	–	–	–
44	21.3	24.5	0.21	–	–	–	–
45	21.9	21.8	0.26	–	–	–	–
46	22.5	23.7	0.20	–	–	–	–
47	23.0	25.7	0.31	–	–	–	–
48	23.6	25.9	0.22	–	–	–	–
49	24.2	26.1	0.31	–	–	–	–
50	24.6	27.5	0.23	–	–	–	–
51	25.1	28.8	0.34	–	–	–	–
52	25.6	26.5	0.22	–	–	–	–
53	26.2	24.1	0.29	–	–	–	–

Table S6. Total and excess ^{210}Pb for 3C core

Depth / cm	Cumulative mass / (g cm ⁻²)	^{210}Pb total / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm ⁻²)	Error
1	0.31	80.3	0.95	58.1	3.76	18.1	1.17
2	0.64	76.9	0.91	54.7	3.75	18.3	1.25
3	1.05	71.7	0.85	49.5	3.74	20.2	1.53
4	1.45	82.4	0.98	60.2	3.77	24.2	1.51
5	1.86	95.3	1.13	73.1	3.81	29.8	1.55
6	2.28	91.9	0.77	69.7	3.72	29.4	1.57
7	2.72	88.5	1.05	66.3	3.79	29.2	1.67
8	3.14	94.7	0.80	72.5	3.73	30.4	1.56
9	3.63	101	1.20	78.7	3.83	38.4	1.87
10	4.27	84.5	0.72	62.3	3.71	40.0	2.38
11	4.93	68.1	0.81	45.9	3.73	30.3	2.47
12	5.64	56.0	0.48	33.8	3.67	23.8	2.59
13	6.32	43.8	0.52	21.6	3.68	14.7	2.49
14	6.95	35.2	0.30	13.0	3.65	8.26	2.32
15	7.61	26.6	0.32	4.34	3.65	2.86	2.41
16	8.25	22.9	0.19	–	–	–	–
17	8.85	19.2	0.23	–	–	–	–
18	9.50	18.5	0.16	–	–	–	–
19	10.1	17.8	0.21	–	–	–	–
20	10.8	23.3	0.20	–	–	–	–
21	11.5	28.8	0.34	–	–	–	–
22	12.2	27.1	0.23	–	–	–	–
23	12.9	25.4	0.30	–	–	–	–
24	13.6	24.9	0.21	–	–	–	–
25	14.4	24.5	0.29	–	–	–	–
26	15.0	21.3	0.25	–	–	–	–
27	15.6	21.9	0.26	–	–	–	–
28	16.1	17.9	0.21	–	–	–	–
29	16.6	17.8	0.21	–	–	–	–

Table S7. Total and excess ^{210}Pb for 2SS core

Depth / cm	Cumulative mass / (g cm ⁻²)	^{210}Pb total / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm ⁻²)	Error
1	0.26	85.6	1.0	63.0	3.9	16.1	0.99
2	0.70	82.7	0.98	60.1	3.8	26.8	1.7
3	1.17	82.9	0.99	60.3	3.8	28.4	1.8
4	1.58	94.7	1.1	72.1	3.9	29.2	1.6
5	1.94	89.8	1.1	67.2	3.9	24.3	1.4
6	2.35	88.6	0.74	66.0	3.8	27.0	1.6
7	2.87	87.4	1.0	64.8	3.9	33.5	2.0
8	3.35	82.0	0.69	59.4	3.8	28.6	1.8
9	3.94	76.5	0.91	53.9	3.8	32.1	2.3
10	4.46	91.5	0.78	68.9	3.8	35.9	2.0
11	5.16	107	1.3	83.9	3.9	58.2	2.7
12	5.81	101	0.85	78.2	3.8	51.1	2.5
13	6.37	95.1	1.13	72.5	3.9	40.5	2.2
14	6.96	85.3	0.72	62.7	3.8	37.4	2.3
15	7.51	75.5	0.90	52.9	3.8	28.9	2.1
16	7.94	85.1	0.72	62.5	3.8	27.0	1.6
17	8.44	94.7	1.1	72.1	3.9	36.0	1.9
18	8.88	99.5	0.84	76.9	3.8	33.6	1.7
19	9.28	104	1.2	81.7	3.9	32.4	1.6
20	9.78	110	0.93	87.6	3.8	43.9	1.9
21	10.2	116	1.4	93.4	4.0	38.3	1.6
22	10.7	103	0.87	80.5	3.8	40.5	1.9
23	11.2	90.3	1.1	67.7	3.9	35.8	2.0
24	11.9	69.2	0.61	46.6	3.8	30.9	2.5
25	12.5	48.1	0.57	25.5	3.8	17.1	2.5
26	13.3	38.7	0.33	16.2	3.7	12.0	2.8
27	14.6	29.4	0.35	6.81	3.7	8.85	4.9
28	15.2	26.4	0.22	–	–	–	–
29	16.1	23.3	0.28	–	–	–	–
30	16.8	24.9	0.21	–	–	–	–
31	17.5	26.5	0.32	–	–	–	–
32	18.2	21.3	0.19	–	–	–	–
33	18.8	16.0	0.19	–	–	–	–
34	19.5	18.9	0.16	–	–	–	–
35	20.1	21.7	0.26	–	–	–	–
36	20.6	17.8	0.21	–	–	–	–
37	21.1	21.5	0.26	–	–	–	–
38	21.6	18.8	0.22	–	–	–	–
39	22.2	27.5	0.33	–	–	–	–
40	23.1	25.9	0.31	–	–	–	–
42	23.9	25.8	0.31	–	–	–	–

Table S8. Total and excess ^{210}Pb for 4SS core

Depth / cm	Cumulative mass / (g cm ⁻²)	^{210}Pb total / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm ⁻²)	Error
1	0.50	114	1.4	85.2	10	42.8	5.1
2	0.88	94.5	1.1	65.5	10	24.6	3.8
3	1.26	95.9	1.1	66.9	10	25.8	3.9
4	1.66	103	1.2	74.4	10	29.4	4.0
5	2.06	192	2.3	163	10	65.5	4.2
6	2.48	139	1.2	110	10	46.6	4.3
7	2.76	85.1	1.0	56.0	10	15.5	2.8
8	3.15	98.9	0.84	69.9	10	27.4	4.0
9	3.59	113	1.3	83.7	10	36.4	4.4
10	3.99	118	1.0	89.2	10	35.6	4.1
11	4.42	124	1.5	94.8	10	41.1	4.4
12	4.92	126	1.1	97.2	10	48.9	5.1
13	5.41	129	1.5	99.7	10	48.1	4.9
14	5.81	114	1.0	85.2	10	34.3	4.1
15	6.21	100	1.2	70.7	10	28.4	4.1
16	6.66	103	0.87	74.4	10	33.1	4.5
17	7.11	107	1.3	78.1	10	35.1	4.6
18	7.50	102	0.85	72.5	10	28.9	4.0
19	7.89	95.9	1.1	66.9	10	25.6	3.9
20	8.39	85.8	0.73	56.8	10	28.6	5.1
21	8.74	75.7	0.90	46.7	10	16.4	3.6
22	9.20	86.1	0.73	57.1	10	26.0	4.6
23	9.57	96.4	1.1	67.4	10	25.0	3.8
24	10.1	95.2	0.80	66.1	10	34.5	5.3
25	10.6	93.9	1.1	64.8	10	31.3	4.9
26	10.9	93.8	0.79	64.8	10	22.8	3.6
27	11.3	93.8	1.1	64.7	10	25.6	4.0
28	11.8	125	1.1	95.6	10	44.0	4.7
29	12.2	156	1.8	127	10	53.2	4.3
30	12.6	136	1.2	107	10	46.3	4.4
31	13.0	117	1.4	87.7	10	36.1	4.2
32	13.5	117	1.0	87.6	10	40.6	4.7
33	13.9	116	1.4	87.5	10	38.1	4.4
34	14.4	116	1.0	87.1	10	43.5	5.1
35	15.0	116	1.4	86.7	10	44.2	5.2
36	15.7	88.8	0.78	59.8	10	47.2	8.0
37	16.5	62.0	0.74	33.0	10	26.3	8.1
38	17.3	54.0	0.46	25.0	10	19.8	8.0
39	18.1	46.0	0.55	17.0	10	13.0	7.7
40	19.0	37.4	0.32	8.37	10	8.00	9.7
41	19.8	28.8	0.34	—	—	—	—
42	20.5	24.6	0.21	—	—	—	—
43	21.2	20.4	0.24	—	—	—	—
44	21.7	17.6	0.15	—	—	—	—
45	22.3	14.9	0.18	—	—	—	—
46	22.9	28.5	0.26	—	—	—	—
47	23.4	42.0	0.50	—	—	—	—
48	24.0	47.2	0.56	—	—	—	—
49	24.7	37.3	0.44	—	—	—	—
50	25.4	32.9	0.39	—	—	—	—
51	26.0	25.2	0.30	—	—	—	—

Table S9. Total and excess ^{210}Pb for 2NN core

Depth / cm	Cumulative mass / (g cm ⁻²)	^{210}Pb total / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm ⁻²)	Error
1	0.26	98.0	1.16	76.3	8.45	19.9	2.20
2	0.63	93.9	1.12	72.2	8.44	26.9	3.14
3	1.05	97.8	1.16	76.1	8.45	31.5	3.50
4	1.58	85.3	1.01	63.7	8.43	33.7	4.46
5	2.29	63.3	0.75	41.6	8.40	29.7	6.00
6	2.84	67.5	0.57	45.8	8.39	25.1	4.59
7	3.54	71.7	0.85	50.1	8.41	35.0	5.89
8	4.36	57.9	0.50	36.2	8.38	29.7	6.89
9	5.03	44.0	0.52	22.3	8.39	14.9	5.62
10	5.74	43.0	0.36	21.3	8.38	15.2	5.96
11	6.31	42.0	0.50	20.3	8.38	11.6	4.76
12	6.88	40.9	0.34	19.2	8.38	11.0	4.77
13	7.50	39.8	0.47	18.2	8.38	11.3	5.24
14	8.00	40.9	0.34	19.2	8.38	9.6	4.19
15	8.51	41.9	0.50	20.2	8.38	10.3	4.25
16	9.07	42.2	0.35	20.5	8.38	11.5	4.70
17	9.84	42.5	0.51	20.8	8.38	15.9	6.41
18	10.6	40.4	0.34	18.7	8.38	13.5	6.02
19	11.1	38.3	0.46	16.6	8.38	8.92	4.49
20	11.6	36.2	0.30	14.5	8.37	7.62	4.40
21	12.1	34.1	0.41	12.4	8.38	6.07	4.10
22	12.7	28.6	0.24	–	–	–	–
23	13.5	23.1	0.27	–	–	–	–
24	14.0	29.1	0.25	–	–	–	–
25	14.6	35.0	0.42	13.3	8.38	7.52	4.72
26	14.9	28.6	0.25	–	–	–	–
27	15.2	22.3	0.26	–	–	–	–
28	15.6	27.4	0.23	–	–	–	–
29	16.0	32.5	0.39	10.8	8.38	4.26	3.30
30	16.4	51.1	0.46	29.4	8.38	12.0	3.43
31	16.9	69.8	0.83	48.1	8.41	24.9	4.36
32	17.8	53.4	0.47	31.7	8.38	27.5	7.26
33	18.7	37.1	0.44	15.4	8.38	14.7	8.02
34	19.2	33.8	0.29	–	–	–	–
35	19.8	30.6	0.36	–	–	–	–
36	20.2	24.4	0.21	–	–	–	–
37	21.0	18.3	0.22	–	–	–	–
38	21.8	17.1	0.14	–	–	–	–
39	22.7	15.9	0.19	–	–	–	–
40	23.4	15.2	0.18	–	–	–	–
41	24.2	15.6	0.19	–	–	–	–
42	25.1	16.3	0.19	–	–	–	–
43	26.4	14.2	0.17	–	–	–	–

Table S10. Total and excess ^{210}Pb for 4C core

Depth / cm	Cumulative mass / ^{210}Pb total / (Bq kg^{-1}) (g cm^{-2})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm^{-2})	Error	
1	0.41	98.0	1.17	67.7	3.15	27.7	1.29
2	0.92	65.1	0.77	34.8	3.02	17.7	2.77
3	1.53	58.6	0.70	28.2	3.01	17.4	4.60
4	2.01	74.8	0.89	44.5	3.06	21.3	6.14
5	2.59	67.9	0.81	37.6	3.03	21.8	7.85
6	3.15	54.1	0.47	23.7	2.96	13.2	9.31
7	3.71	40.2	0.48	9.89	2.96	5.60	11.0
8	4.28	41.0	0.34	10.7	2.94	6.11	12.6
9	4.86	41.8	0.50	11.5	2.97	6.63	14.4
10	5.40	36.7	0.31	6.41	2.94	3.44	15.9
11	5.91	31.7	0.38	–	–	–	–
12	6.49	32.0	0.27	–	–	–	–
13	7.05	32.3	0.38	–	–	–	–
14	7.58	30.3	0.26	–	–	–	–
15	8.09	28.4	0.34	–	–	–	–
16	8.61	27.4	0.23	–	–	–	–
17	9.13	26.5	0.31	–	–	–	–
18	9.63	33.9	0.29	–	–	–	–
19	10.1	41.3	0.49	–	–	–	–
20	10.7	35.8	0.30	–	–	–	–
21	11.1	30.2	0.36	–	–	–	–
22	11.6	28.0	0.33	–	–	–	–
23	12.2	26.6	0.32	–	–	–	–
24	12.7	34.9	0.41	–	–	–	–
25	13.3	31.9	0.38	–	–	–	–
26	14.1	30.3	0.36	–	–	–	–

Table S11. Total and excess ^{210}Pb for 2S core

Depth / cm	Cumulative mass / (g cm^{-2})	^{210}Pb total / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm^{-2})	Error
1	0.32	76.4	0.91	51.1	2.23	16.2	0.71
2	0.61	80.9	0.96	55.6	2.25	15.9	0.64
3	0.97	81.6	0.97	56.3	2.26	20.3	0.81
4	1.38	105	1.25	79.9	2.39	33.4	1.00
5	1.88	88.3	1.05	63.0	2.29	31.2	1.14
6	2.30	84.6	0.71	59.3	2.16	25.0	0.91
7	2.78	80.9	0.96	55.6	2.25	26.4	1.07
8	3.20	83.7	0.70	58.4	2.16	24.5	0.90
9	3.63	86.5	1.03	61.2	2.28	26.6	0.99
10	4.06	76.6	0.65	51.3	2.14	22.2	0.93
11	4.52	66.6	0.79	41.3	2.19	18.8	1.00
12	4.98	64.3	0.54	39.0	2.11	17.9	0.97
13	5.46	62.0	0.74	36.7	2.17	17.7	1.05
14	5.95	63.7	0.54	38.4	2.11	18.9	1.04
15	6.44	65.4	0.78	40.1	2.18	19.6	1.07
16	6.88	60.5	0.51	35.2	2.10	15.5	0.93
17	7.47	55.6	0.66	30.3	2.14	17.7	1.25
18	7.97	61.9	0.52	36.6	2.10	18.6	1.07
19	8.44	68.2	0.81	42.9	2.19	20.2	1.03
20	8.97	61.4	0.52	36.0	2.10	18.9	1.10
21	9.56	54.5	0.65	29.1	2.14	17.3	1.27
22	10.2	69.4	0.60	44.0	2.12	26.2	1.26
23	10.6	84.3	1.00	58.9	2.27	27.9	1.08
24	11.1	82.4	0.69	57.1	2.15	28.8	1.09
25	11.6	80.5	0.96	55.2	2.25	26.1	1.07
26	12.1	104	0.89	78.6	2.23	38.2	1.08
27	12.6	127	1.51	102.0	2.54	55.8	1.39
28	13.1	113	0.96	88.2	2.25	42.5	1.09
29	13.6	99.7	1.18	74.4	2.36	38.1	1.21
30	14.1	103	0.86	77.2	2.21	37.2	1.06
31	14.7	105	1.25	80.1	2.39	47.4	1.41
32	15.2	86.3	0.74	61.0	2.17	29.4	1.04
33	15.8	67.1	0.80	41.8	2.19	26.8	1.41
34	16.4	62.2	0.52	36.9	2.10	22.2	1.27
35	17.1	57.3	0.68	32.0	2.15	20.1	1.35
36	17.4	52.0	0.44	26.6	2.08	7.8	0.61
37	18.0	46.6	0.55	21.3	2.11	13.1	1.30
38	18.7	53.5	0.45	28.1	2.09	19.8	1.47
39	19.4	60.3	0.72	35.0	2.16	23.9	1.48
40	20.1	58.5	0.49	33.1	2.10	23.9	1.51
41	20.8	56.6	0.67	31.3	2.15	22.0	1.51
42	21.6	49.0	0.42	23.7	2.08	19.5	1.71
43	22.4	41.5	0.49	16.2	2.10	12.6	1.63
44	23.1	39.8	0.34	14.5	2.07	10.4	1.48
45	23.9	38.2	0.45	12.9	2.09	10.7	1.74
46	24.8	37.0	0.31	11.6	2.06	9.94	1.76
47	25.7	35.7	0.42	10.4	2.08	8.89	1.77
48	26.6	27.9	0.33	–	–	–	–
49	27.4	24.8	0.29	–	–	–	–
50	28.2	25.6	0.30	–	–	–	–
51	29.2	23.0	0.27	–	–	–	–

Table S12. Total and excess ^{210}Pb for 2C core

Depth / cm	Cumulative mass / (g cm ⁻²)	^{210}Pb total / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg ⁻¹)	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm ⁻²)	Error
1	0.17	68.5	0.81	41.0	3.1	7.1	4.4
2	0.45	73.9	0.88	46.3	3.2	12.9	4.4
3	0.77	74.2	0.88	46.6	3.2	15.0	4.4
4	1.10	69.4	0.82	41.8	3.1	13.9	4.4
5	1.50	69.9	0.83	42.4	3.1	16.8	4.4
6	1.91	77.1	0.65	49.5	3.1	20.1	4.3
7	2.30	84.2	1.00	56.6	3.2	22.5	4.4
8	2.75	89.2	0.75	61.6	3.1	27.6	4.4
9	3.29	94.1	1.12	66.6	3.2	36.2	4.4
10	3.75	101.5	0.85	73.9	3.2	33.8	4.4
11	4.30	108.8	1.29	81.2	3.3	44.9	4.5
12	4.79	103.1	0.87	75.6	3.2	36.8	4.4
13	5.27	97.5	1.16	69.9	3.2	33.2	4.4
14	5.69	82.3	0.70	54.7	3.1	23.4	4.3
15	6.09	67.1	0.80	39.5	3.1	15.6	4.4
16	6.56	62.5	0.53	34.9	3.1	16.6	4.3
17	7.08	57.9	0.69	30.3	3.1	15.9	4.3
18	7.56	55.4	0.47	27.8	3.1	13.1	4.3
19	8.02	52.9	0.63	25.3	3.1	11.7	4.3
20	8.48	59.3	0.50	31.8	3.1	14.8	4.3
21	8.92	65.8	0.78	38.2	3.1	16.8	4.4
22	9.42	62.5	0.52	35.0	3.1	17.5	4.3
23	10.0	59.3	0.70	31.7	3.1	18.3	4.3
24	10.6	52.5	0.44	25.0	3.1	15.0	4.3
25	11.3	45.8	0.54	18.2	3.1	12.6	4.3
26	11.9	40.3	0.34	12.8	3.1	8.28	4.3
27	12.8	34.9	0.41	7.33	3.1	6.21	4.3
28	13.8	32.4	0.38	4.81	3.10	4.81	4.30
29	14.7	28.3	0.34	–	–	–	–
30	15.8	23.5	0.28	–	–	–	–
31	16.9	27.6	0.33	–	–	–	–
32	18.0	30.8	0.37	–	–	–	–

Table S13. Total and excess ^{210}Pb for 4S core

Depth / cm	Cumulative mass / (g cm^{-2})	^{210}Pb total / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (Bq kg^{-1})	Error	$^{210}\text{Pb}_{\text{exc}}$ / (mBq cm^{-2})	Error
1	0.35	83.0	0.99	56.6	0.99	20.0	0.35
2	0.88	91.9	1.1	63.6	1.1	33.7	0.58
3	1.42	85.2	1.0	56.9	1.0	30.8	0.55
4	2.07	76.5	0.91	48.2	0.91	31.3	0.59
5	2.74	105	1.2	76.7	1.2	51.1	0.83
6	3.51	93.3	0.79	65.0	0.79	50.2	0.61
7	4.35	81.7	0.97	53.3	0.97	44.5	0.81
8	5.06	89.5	0.76	61.2	0.76	43.8	0.54
9	5.77	97.4	1.2	69.1	1.2	48.8	0.82
11	7.16	96.1	0.81	67.7	0.81	94.3	1.1
12	8.02	94.8	1.1	66.4	1.1	57.0	0.97
13	8.89	93.0	0.78	64.7	0.78	56.4	0.68
14	9.68	91.3	1.1	63.0	1.1	49.7	0.86
15	10.4	107	0.91	78.6	0.91	60.5	0.70
16	11.2	122	1.5	94.2	1.5	70.3	1.1
17	12.1	113	0.95	84.3	0.95	73.7	0.83
18	12.8	103	1.2	74.4	1.2	56.0	0.92
19	13.6	106	0.90	78.1	0.90	58.4	0.67
20	14.3	110	1.3	81.9	1.3	59.7	0.96
21	15.1	107	0.90	78.6	0.90	64.7	0.74
22	15.9	104	1.2	75.3	1.2	61.0	1.0
23	16.7	94.3	0.80	65.9	0.80	51.6	0.62
24	17.6	84.9	1.0	56.5	1.0	48.2	0.86
25	18.5	82.6	0.69	54.2	0.69	48.1	0.62
26	19.3	80.2	0.95	51.9	0.95	42.0	0.77
27	20.1	83.9	0.71	55.6	0.71	45.5	0.58
28	20.9	87.6	1.0	59.2	1.0	47.7	0.84
29	21.7	81.3	0.69	52.9	0.69	41.9	0.54
30	22.6	75.0	0.89	46.6	0.89	42.2	0.81
31	23.5	74.5	0.89	46.2	0.89	40.0	0.77
32	24.5	66.8	0.79	38.5	0.79	40.3	0.83
33	25.6	64.9	0.77	36.6	0.77	39.1	0.82
34	26.7	50.4	0.60	22.1	0.60	25.0	0.68
35	28.0	47.1	0.56	18.7	0.56	25.1	0.75
36				6.15 ^a		7.38 ^a	
37				2.20 ^a		2.42 ^a	
38				1.11 ^a		1.11 ^a	
39				0.22 ^a		0.20 ^a	
40				0.05 ^a		0.05 ^a	

^aextrapolated values.