



Supplement of

Technical note: Comparison of radiometric techniques for estimating recent organic carbon sequestration rates in inland wetland soils

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Table of Contents

Table S1: Summary of physical characteristics of undisturbed wetlands.	3
Table S2: Organic carbon (OC) sequestration rates and their associated classification of 44 sediment cores where both ¹³⁷ Cs and ²¹⁰ Pb profiles were available.	4
Figure S1: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) A-WE-I-W2-T3-CW-R3, (b) S-RO-I-W2-T2-CW-R2, (c) S-LO-I-W3-T2-CW-R2, and (d) S-LO-I-W3-T3-CW-R3.	5
Figure S2: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-LO-I-W4-T2-CW-R2, (b) S-RO-I-W5-T1-CW-R1, (c) S-RO-I-W5-T3-CW-R3, and (d) S-RU-I-W7-T1-CW-R1.	6
Figure S3: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-RU-I-W7-T2-CW-R2, (b) S-RU-I-W7-T3-CW-R3, (c) S-FO-I-W8-T2-CW-R2, and (d) S-FO-I-W8-T3-CW-R3.	7
Figure S4: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-FO-I-W9-T2-CW-R2, (b) S-FO-I-W11-T1-CW-R1, (c) S-FO-I-W11-T2-CW-R2, and (d) S-FO-I-W11-T3-CW-R3.	8
Figure S5: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-FO-I-W12-T1-CW-R1, (b) S-FO-I-W12-T3-CW-R3, (c) S-FO-I-W16-T2-CW-R2, and (d) S-FO-I-W16-T3-CW-R3.	9
Figure S6: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) M-OA-I-W1-T1-CW-R1, (b) M-OA-I-W1-T2-CW-R2, (c) M-OA-I-W1-T3-CW-R3, and (d) M-OA-I-W2-T1-CW-R1.	10
Figure S7: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear plot of log-transformed ²¹⁰ Pb _{ex} against mass depth [g cm ⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) M-OA-I-W4-T1-CW-R1, (b) M-OA-I-W4-T2-CW-R2, (c) O-BR-I-W1-T2-CW-R2, and (d) O-BR-I-W1-T3-CW-R3.	11

Figure S8: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles	12
(along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear	
plot of log-transformed ²¹⁰ Pbex against mass depth [g cm ⁻²]) based on their classification. The depth	
distribution plot is from sediment core O-AL-I-W5-T3-CW-R3.	
Figure S9: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and low-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles	13
(along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear	
plot of log-transformed ²¹⁰ Pbex against mass depth [g cm ⁻²]) based on their classification. The four depth	
distribution plots are from sediment cores (a) S-FO-I-W9-T3-CW-R3, (b) M-OA-I-W3-T2-CW-R2, (c) M-	
OA-I-W5-T1-CW-R1, and (d) M-OA-I-W5-T3-CW-R3.	
Figure S10: Depth distributions of high-quality ¹³⁷ Cs (Bq kg ⁻¹) and low-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles	14
(along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear	
plot of log-transformed ²¹⁰ Pbex against mass depth [g cm ⁻²]) based on their classification. The depth	
distribution plot is from sediment core O-AL-I-W4-T3-CW-R3.	
Figure S11: Depth distributions of low-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles	15
(along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear	
plot of log-transformed ²¹⁰ Pbex against mass depth [g cm ⁻²]) based on their classification. The four depth	
distribution plots are from sediment cores (a) O-BR-I-W2-T2-CW-R2, (b) O-BR-I-W2-T3-CW-R3, (c) O-	
BR-I-W2-T4-CW-R4, and (d) O-AL-I-W4-T1-CW-R1.	
Figure S12: Depth distributions of low-quality ¹³⁷ Cs (Bq kg ⁻¹) and high-quality ²¹⁰ Pb (Bq kg ⁻¹) profiles	16
(along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷ Cs inventory [Bq m ⁻²], and linear	
plot of log-transformed ²¹⁰ Pbex against mass depth [g cm ⁻²]) based on their classification. The two depth	
distribution plots are from sediment cores (a) O-AL-I-W4-T2-CW-R2 and (b) O-AL-I-W6-T1-CW-R1.	

Table S1: Summary of physical characteristics of undisturbed wetlands.

Wetland ID	A-WE-I-W1,	S-RO-I-W1,	M-OA-I-W1,	O-BR-I-W1,
	A-WE-I-W2,	S-RO-I-W2,	M-OA-I-W2,	O-BR-I-W2,
	A-CA-I-W3	S-LO-I-W3,	M-OA-I-W3,	O-BR-I-W3,
		S-LO-I-W4,	M-OA-I-W4,	O-AL-I-W4,
		S-RO-I-W5,	M-OA-I-W5	O-AL-I-W5,
		S-RO-I-W6,		O-AL-I-W6
		S-RU-I-W7,		
		S-FO-I-W8,		
		S-FO-I-W9,		
		S-FO-I-W10,		
		S-FO-I-W11,		
		S-FO-I-W12,		
		S-EM-I-W14,		
		S-FO-I-W15,		
		S-FO-I-W16		
Province	Alberta	Saskatchewan	Manitoba	Ontario
Number of wetlands	3	16	5	6
Latitude and longitude	53.1° to 53.2° N,	51.4° to 51.5° N,	50.1° to 50.2° N,	43.3° to 45.6° N, 74.8°
	113.1° to 113.2° W	103.7° to 106.7° W	100.2° to 100.3° W	to 80.3° W
Sampling year	2016	2019	2019	2018, 2019
Mean temperature of the growing season (⁰ C)	11	12.1, 11.7	12.4	14.3, 13.8
Mean total annual precipitation of the water	439	360, 458	464	892, 997
Hardiness zone	3h	3a - 3h	3a	5a - 5b
Proportion of hardiness	1	1	07	0.7 - 1
Soil great group	Black Chernozem	Dark Brown	Black Chernozem	Grev Brown Luvisol
Son grout group	Didek Chernozem	Chernozem, Black	Didek Chernozeni	Humic Glevsol
		Chernozem		
Soil texture	Fine	Medium	Fine	Coarse, fine
Local surface form	Hummocky and	Hummocky	Hummocky	Hummocky, level
	undulating	undulating, and ridged	j	
Regional slope (%)	0-9	0-9	4-9	0-15
Drainage class	Well-drained	Well-drained	Well-drained	Well- to Poorly-drained

Table S2: Organic carbon (OC) sequestration rates based on ¹³⁷Cs and ²¹⁰Pb dating and their associated classification of 44 sediment cores (where both ¹³⁷Cs and ²¹⁰Pb profiles were available).

Wetland sediment core IDClassification of ^{137}Cs Classification of ^{210}Pb sequestration rate since (Mg ha ⁻¹ yr ⁻¹)sequestration rate since 1963, ^{137}Cs sequestration rate since 1963, ^{10}Pb sequestr				OC	OC	OC	OC
Wetland sediment core IDClassification of ^{137}Cs Classification of ^{210}Pb rate since (Mg ha'1 yr')rate since (1963, ^{137}Cs rate since (1963, ^{137}Cs rate since (1963, ^{137}Cs rate since (1963, ^{210}Pb rate since (1963, ^{210}Pb rate since (1963, ^{210}Pb)rate since (1963, ^{210}P				sequestration	sequestration	sequestration	sequestration
Wetland sediment core IDClassification of ^{137}Cs 1954, ^{137}Cs 1963, ^{137}Cs 1954, ^{210}Pb 1963, ^{210}Pb A-WE-I-W2-T3-CW-R3High-qualityHigh-quality1.040.620.800.78S-RO-I-W1-T3-CW-R3Low-qualityHigh-quality1.040.620.800.78S-RO-I-W2-T2-CW-R3Low-qualityHigh-quality0.320.270.310.33S-RO-I-W2-T2-CW-R2High-qualityHigh-quality0.640.370.370.40S-LO-I-W3-T1-CW-R1High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.470.340.400.43S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T2-CW-R3High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T2-CW-R4High-qualityHigh-quality0.470.340.400.43S-LO-I-W3-T3-CW-R3High-qualityHigh-quality0.930.840.350.36S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.930.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70S-RO-I-W5-T3-CW-R3High-qualityHigh-quality0.110.050.690.73				rate since	rate since	rate since	rate since
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Wetland sediment core	ore Classification	n Classification	1954, ¹³⁷ Cs	1963, ¹³⁷ Cs	1954, ²¹⁰ Pb	1963, ²¹⁰ Pb
A-WE-I-W2-T3-CW-R3High-qualityHigh-quality1.040.620.800.78S-RO-I-W1-T3-CW-R3Low-qualityHigh-quality0.320.270.310.33S-RO-I-W2-T2-CW-R2High-qualityHigh-quality1.621.380.470.49S-LO-I-W3-T1-CW-R1High-qualityHigh-quality0.640.370.370.40S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T3-CW-R3High-qualityHigh-quality0.470.340.400.43S-LO-I-W4-T2-CW-R2High-qualityHigh-quality0.930.840.350.36S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70	ID	of ¹³⁷ Cs	of ²¹⁰ Pb	(Mg ha ⁻¹ yr ⁻¹)			
S-RO-I-W1-T3-CW-R3Low-qualityHigh-quality0.320.270.310.33S-RO-I-W2-T2-CW-R2High-qualityHigh-quality1.621.380.470.49S-LO-I-W3-T1-CW-R1High-qualityHigh-quality0.640.370.370.40S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.470.340.400.43S-LO-I-W3-T3-CW-R3High-qualityHigh-quality0.930.840.350.36S-LO-I-W4-T2-CW-R2High-qualityHigh-quality0.930.840.350.36S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70	A-WE-I-W2-T3-CW-R3	R3 High-quality	High-quality	1.04	0.62	0.80	0.78
S-RO-I-W2-T2-CW-R2High-qualityHigh-quality1.621.380.470.49S-LO-I-W3-T1-CW-R1High-qualityHigh-quality0.640.370.370.40S-LO-I-W3-T2-CW-R2High-qualityHigh-quality0.560.370.450.50S-LO-I-W3-T3-CW-R3High-qualityHigh-quality0.470.340.400.43S-LO-I-W4-T2-CW-R2High-qualityHigh-quality0.930.840.350.36S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70S-RO-I-W5-T3-CW-R1Low-qualityHigh-quality0.110.050.690.73	S-RO-I-W1-T3-CW-R3	R3 Low-quality	High-quality	0.32	0.27	0.31	0.33
S-LO-I-W3-T1-CW-R1High-qualityHigh-quality 0.64 0.37 0.37 0.40 S-LO-I-W3-T2-CW-R2High-qualityHigh-quality 0.56 0.37 0.45 0.50 S-LO-I-W3-T3-CW-R3High-qualityHigh-quality 0.47 0.34 0.40 0.43 S-LO-I-W3-T3-CW-R2High-qualityHigh-quality 0.93 0.84 0.35 0.36 S-LO-I-W4-T2-CW-R2High-qualityHigh-quality 0.93 0.84 0.35 0.36 S-RO-I-W5-T1-CW-R1High-qualityHigh-quality 0.84 0.68 0.80 0.83 S-RO-I-W5-T3-CW-R3High-qualityHigh-quality 1.00 0.75 0.69 0.73	S-RO-I-W2-T2-CW-R2	R2 High-quality	High-quality	1.62	1.38	0.47	0.49
S-LO-I-W3-T2-CW-R2High-qualityHigh-quality 0.56 0.37 0.45 0.50 S-LO-I-W3-T3-CW-R3High-qualityHigh-quality 0.47 0.34 0.40 0.43 S-LO-I-W4-T2-CW-R2High-qualityHigh-quality 0.93 0.84 0.35 0.36 S-RO-I-W5-T1-CW-R1High-qualityHigh-quality 0.84 0.68 0.80 0.83 S-RO-I-W5-T3-CW-R3High-qualityHigh-quality 1.00 0.75 0.68 0.70 S-RO-I-W5-T1-CW-R1Low-qualityLow-quality 0.11 0.05 0.69 0.73	S-LO-I-W3-T1-CW-R1	R1 High-quality	High-quality	0.64	0.37	0.37	0.40
S-LO-I-W3-T3-CW-R3 High-quality High-quality 0.47 0.34 0.40 0.43 S-LO-I-W4-T2-CW-R2 High-quality High-quality 0.93 0.84 0.35 0.36 S-RO-I-W5-T1-CW-R1 High-quality High-quality 0.84 0.68 0.80 0.83 S-RO-I-W5-T3-CW-R3 High-quality High-quality 1.00 0.75 0.68 0.70 S-RO-I-W6-T1-CW-R1 Low-quality Low-quality 0.11 0.05 0.69 0.73	S-LO-I-W3-T2-CW-R2	R2 High-quality	High-quality	0.56	0.37	0.45	0.50
S-LO-I-W4-T2-CW-R2High-qualityHigh-quality0.930.840.350.36S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70S-RO-I-W6-T1-CW-R1Low-qualityLow-quality0.110.050.690.73	S-LO-I-W3-T3-CW-R3	R3 High-quality	High-quality	0.47	0.34	0.40	0.43
S-RO-I-W5-T1-CW-R1High-qualityHigh-quality0.840.680.800.83S-RO-I-W5-T3-CW-R3High-qualityHigh-quality1.000.750.680.70S-RO-I-W6-T1-CW-R1Low-qualityLow-quality0.110.050.690.73	S-LO-I-W4-T2-CW-R2	R2 High-quality	High-quality	0.93	0.84	0.35	0.36
S-RO-I-W5-T3-CW-R3 High-quality High-quality 1.00 0.75 0.68 0.70 S-RO-I-W6-T1-CW-R1 Low-quality Low-quality 0.11 0.05 0.69 0.73	S-RO-I-W5-T1-CW-R1	R1 High-quality	High-quality	0.84	0.68	0.80	0.83
S-RO-L-W6-T1-CW-R1 Low-quality 0.11 0.05 0.69 0.73	S-RO-I-W5-T3-CW-R3	R3 High-quality	High-quality	1.00	0.75	0.68	0.70
J-KO-1-WO-11-CW-KI LOW-QUAILY LOW-QUAILY U.11 U.UJ U.UJ U.UJ U.UJ	S-RO-I-W6-T1-CW-R1	R1 Low-quality	Low-quality	0.11	0.05	0.69	0.73
S-RU-I-W7-T1-CW-R1 High-quality High-quality 0.86 0.55 0.53 0.56	S-RU-I-W7-T1-CW-R1	R1 High-quality	High-quality	0.86	0.55	0.53	0.56
S-RU-I-W7-T2-CW-R2 High-quality High-quality 0.57 0.30 0.41 0.43	S-RU-I-W7-T2-CW-R2	R2 High-quality	High-quality	0.57	0.30	0.41	0.43
S-RU-I-W7-T3-CW-R3 High-quality High-quality 0.69 0.60 0.54 0.56	S-RU-I-W7-T3-CW-R3	R3 High-quality	High-quality	0.69	0.60	0.54	0.56
S-FO-I-W8-T2-CW-R2 High-quality High-quality 1.01 0.83 0.81 0.81	S-FO-I-W8-T2-CW-R2	R2 High-quality	High-quality	1.01	0.83	0.81	0.81
S-FQ-I-W8-T3-CW-R3 High-quality High-quality 0.88 0.83 0.77 0.77	S-FO-I-W8-T3-CW-R3	R3 High-quality	High-quality	0.88	0.83	0.77	0.77
S-FQ-I-W9-T2-CW-R2 High-quality High-quality 0.58 0.34 0.34 0.34	S-FO-I-W9-T2-CW-R2	R2 High-quality	High-quality	0.58	0.34	0.34	0.34
S-FQ-I-W9-T3-CW-R3 High-quality Low-quality 0.44 0.37 0.60 0.63	S-FO-I-W9-T3-CW-R3	R3 High-quality	Low-quality	0.44	0.37	0.60	0.63
S-FQ-I-W11-T1-CW-R1 High-quality High-quality 1.70 1.57 1.41 1.36	S-FO-I-W11-T1-CW-R1	-R1 High-quality	High-quality	1.70	1.57	1.41	1.36
S-FQ-I-W11-T2-CW-R2 High-quality High-quality 1.31 1.14 0.69 0.71	S-FO-I-W11-T2-CW-R2	-R2 High-quality	High-quality	1.31	1.14	0.69	0.71
S-FQ-I-W11-T3-CW-R3 High-quality High-quality 1.04 1.03 0.95 0.95	S-FO-I-W11-T3-CW-R3	-R3 High-quality	High-quality	1.04	1.03	0.95	0.95
S-FQ-I-W12-T1-CW-R1 High-quality High-quality 1.25 0.65 1.04 1.04	S-FO-I-W12-T1-CW-R1	-R1 High-quality	High-quality	1.25	0.65	1.04	1.04
S-FO-I-W12-T3-CW-R3 High-quality High-quality 1.16 0.76 0.71 0.71	S-FO-I-W12-T3-CW-R3	-R3 High-quality	High-quality	1 16	0.76	0.71	0.71
S-FQ-I-W16-T2-CW-R2 High-quality High-quality 0.67 0.50 0.59 0.60	S-FO-I-W16-T2-CW-R2	-R2 High-quality	High-quality	0.67	0.50	0.59	0.60
S-FQ-I-W16-T3-CW-R3 High-quality High-quality 1.18 0.38 0.46 0.46	S-FO-I-W16-T3-CW-R3	-R3 High-quality	High-quality	1.18	0.38	0.46	0.46
M-OA-I-W1-TI-CW-R1 High-quality High-quality 1.60 0.39 0.51 0.53	M-0A-I-W1-T1-CW-R1	-R1 High-quality	High-quality	1.60	0.39	0.51	0.53
M-OA-I-W1-T2-CW-R2 High-quality High-quality 111 0.91 0.97 1.01	M-OA-I-W1-T2-CW-R2	-R2 High-quality	High-quality	1 11	0.91	0.97	1.01
$M_{-}OA_{-}I_{-}W1_{-}T3_{-}CW_{-}R3_{-}High-quality High-quality 0.99 0.50 0.60 0.63$	M-OA-I-W1-T3-CW-R3	.R3 High-quality	High-quality	0.99	0.50	0.60	0.63
M-OA-I-W2-TI-CW-R1 High-quality High-quality 0.98 0.12 1.08 1.15	M-OA-I-W2-T1-CW-R1	-R1 High-quality	High-quality	0.98	0.12	1.08	1 15
$M_{-}OA_{-}I_{-}W_{-}^{2}T_{-}CW_{-}R_{2}^{2}$ High-quality $I_{-}Ow_{-}quality = 1.16$ 0.55 0.50 0.52	M-OA-I-W3-T2-CW-R2	.R? High-quality	L ow-quality	1 16	0.55	0.50	0.52
$M_{1}OA_{1}W_{2}D_{1}W_{2}W_{2}D_{1}W_{2}W_{2}D_{1}W_{2}W_{2}W_{2}W_{2}W_{2}W_{2}W_{2}W_{2$	$M_{-}OA_{-}I_{-}W4_{-}T1_{-}CW_{-}R1$.R1 High-quality	High-quality	0.44	0.55	0.30	0.32
$M_{-}OA_{-}I_{-}W_{+}T_{-}CW_{-}R_{2}$ High-quality High-quality 0.65 0.45 0.43 0.46	M-OA-I-W4-T1-CW-R1	.R2 High-quality	High-quality	0.65	0.45	0.43	0.50
$M_{-}OA_{-}I_{-}W_{+}T_{2}CW_{+}R_{3}$ High-quality $I_{-}Ow_{-}ouality$ 0.78 0.06 0.81 0.86	M = OA = I = W = T2 = CW = R2 M = OA = I = W4 = T3 = CW = R3	.R3 High-quality	Low-quality	0.05	0.45	0.45	0.40
MOALWSTICK PI High-quality Low-quality 103 026 0.38 0.39	M = OA = I = W = T = CW = RS	-R5 High-quality	Low-quality	1.03	0.00	0.38	0.30
M = OA + W = T = CW = A = High-quality Low-quality 1.65 0.20 0.50 0.55 0.57	M = OA = I = W = T = CW = R I	-R1 High-quality	Low-quality	1.05	1.55	1.80	1.03
O BP L W1 72 CW R2 High-quality High quality 1.22 0.48 0.74 0.74	$\Omega_{\rm BR-LW1-T2-CW-R2}$	R_2 High-quality	High-quality	1.00	0.48	0.74	0.74
O-BR-IW 1-12-CW-R2 High-quality High-quality 1.22 0.46 0.74 0.74	D-BR-I-W1-T2-CW-R2	R2 High-quality	High-quality	1.22	0.48	1.03	1.04
OBR-IW175-CW-R2 I Ign-quality High-quality 1.05 0.21 1.05 1.04	$D_{BR-I} = W_{2} = T_{2} = C_{W-R_{2}}$	$R_2 = I_{ow-quality}$	High-quality	0.53	0.21	0.42	0.40
O BR I W2 12-CW R2 Low-quality High quality 0.55 0.21 0.42 0.40	$\mathbf{O} \mathbf{P} \mathbf{P} \mathbf{I} \mathbf{W}^2 \mathbf{T}^2 \mathbf{C} \mathbf{W} \mathbf{P}^2$	P3 Low quality	High quality	0.35	0.21	0.42	0.40
OBR-19-2-13-CW-RA Low-quality High-quality 0.20 0.17 0.55 0.50	$O_{BR-I} = W_2 = T_3 - C_W - R_3$	R_{1} Low-quality	High-quality	0.20	0.17	0.55	0.50
O AL LWATI CW P1 Low quality High quality 0.62 0.57 0.55 0.54	O AL I W A T1 CW P1	P1 Low quality	High quality	0.60	0.57	0.55	0.87
0.00 0.10 0.00 0.87	$\Delta = \Delta I = I = W A = T 2 = C W = C I$	R ² Low-quality	High-quality	1.14	0.10	0.00	0.07
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\Delta I = I = W/A = T^2 = CW/D^2$	R3 High quality	I ow quality	1.14 2.21	1.59	0.73	0.74
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\Delta I = I = W = I = C = W = K = C = C = C = C = C = C = C = C = C$	R3 High quality	High quality	2.51	0.76	0.75	0.75
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	D-AI-I-W6-T1-CW-R1	R1 Low-quality	High-quality	2.00	0.10	0.70	0.23



Figure S1: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) A-WE-I-W2-T3-CW-R3, (b) S-RO-I-W2-T2-CW-R2, (c) S-LO-I-W3-T2-CW-R2, and (d) S-LO-I-W3-T3-CW-R3.



Figure S2: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-LO-I-W4-T2-CW-R2, (b) S-RO-I-W5-T1-CW-R1, (c) S-RO-I-W5-T3-CW-R3, and (d) S-RU-I-W7-T1-CW-R1.



Figure S3: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-RU-I-W7-T2-CW-R2, (b) S-RU-I-W7-T3-CW-R3, (c) S-FO-I-W8-T2-CW-R2, and (d) S-FO-I-W8-T3-CW-R3.



Figure S4: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-FO-I-W9-T2-CW-R2, (b) S-FO-I-W11-T1-CW-R1, (c) S-FO-I-W11-T2-CW-R2, and (d) S-FO-I-W11-T3-CW-R3.



Figure S5: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-FO-I-W12-T1-CW-R1, (b) S-FO-I-W12-T3-CW-R3, (c) S-FO-I-W16-T2-CW-R2, and (d) S-FO-I-W16-T3-CW-R3.



Figure S6: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) M-OA-I-W1-T1-CW-R1, (b) M-OA-I-W1-T2-CW-R2, (c) M-OA-I-W1-T3-CW-R3, and (d) M-OA-I-W2-T1-CW-R1.



Figure S7: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) M-OA-I-W4-T1-CW-R1, (b) M-OA-I-W4-T2-CW-R2, (c) O-BR-I-W1-T2-CW-R2, and (d) O-BR-I-W1-T3-CW-R3.



Figure S8: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The depth distribution plot is from sediment core O-AL-I-W5-T3-CW-R3.



Figure S9: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and low-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) S-FO-I-W9-T3-CW-R3, (b) M-OA-I-W3-T2-CW-R2, (c) M-OA-I-W5-T1-CW-R1, and (d) M-OA-I-W5-T3-CW-R3.



Figure S10: Depth distributions of high-quality ¹³⁷Cs (Bq kg⁻¹) and low-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The depth distribution plot is from sediment core O-AL-I-W4-T3-CW-R3.



Figure S11: Depth distributions of low-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The four depth distribution plots are from sediment cores (a) O-BR-I-W2-T2-CW-R2, (b) O-BR-I-W2-T3-CW-R3, (c) O-BR-I-W2-T4-CW-R4, and (d) O-AL-I-W4-T1-CW-R1.



Figure S12: Depth distributions of low-quality ¹³⁷Cs (Bq kg⁻¹) and high-quality ²¹⁰Pb (Bq kg⁻¹) profiles (along with the organic carbon [OC] concentrations [%], cumulative ¹³⁷Cs inventory [Bq m⁻²], and linear plot of log-transformed ²¹⁰Pb_{ex} against mass depth [g cm⁻²]) based on their classification. The two depth distribution plots are from sediment cores (a) O-AL-I-W4-T2-CW-R2 and (b) O-AL-I-W6-T1-CW-R1.