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Supplementary material

Digging up the dirty past: evidence for stormwater's contribution to pollution of an urban floodplain lake

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Discussion of data used for normalisation

There are visible shifts in S intensities over time (Fig. S1) with highest levels occurring in the late 20th century. This is expected to increase the absolute Hg concentrations within the sediment core. Fig. S1 shows that although there is minimal intra-core variability in Al concentrations, Al concentrations were markedly higher in W1 compared with W4. As discussed in the text, we hypothesise that this results from spatial variability within the billabong.

Organic matter levels (Fig. S1) decrease in *c*. 1840, and remain low until the late 19th century. An increasing trend in organic matter levels into the 20th century is apparent. This variability in organic matter through the cores highlights the need to normalise the POP concentrations to organic matter, to ensure that the variation in organic matter levels is not influencing our interpretation of the POP profiles.

Table S1. Heavy metal concentrations in W4 and W1

Depth	Year	Metal concentrations (mg kg^{-1})															
		Al	As	Ba	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Ni	Sr	Ti	V	Zn
W4																	
0	2012.0	18000	6	170	0.6	33	9	25	16000	59	87	0.16	21	15	11	22	260
1	2011.3	18000	7	170	0.8	32	9	26	15000	62	92	0.12	22	16	8	23	300
2	2010.5	18000	7	180	0.6	33	9	24	15000	62	100	0.12	22	17	13	24	320
3	2009.8	18000	7	170	0.6	33	9	24	15000	64	100	0.12	22	16	10	24	320
4	2009.1	18000	7	150	0.6	33	8	25	15000	62	92	0.12	21	14	13	25	260
5	2008.4	18000	6	160	0.5	32	7	23	15000	59	81	0.12	19	13	13	24	210
6	2007.6	18000	6	150	0.5	32	8	25	17000	57	93	0.12	21	14	12	24	260
7	2006.9	18000	6	210	0.5	32	11	24	16000	54	130	0.11	24	20	10	24	360
8	2006.2	16000	8	190	0.5	29	12	23	18000	52	110	0.1	25	19	7	25	350
9	2005.5	18000	10	180	0.8	33	13	29	16000	73	130	0.13	28	22	18	27	510
10	2004.7	18000	9	190	0.8	32	11	25	17000	76	130	0.13	24	22	8	25	440
11	2004.0	19000	6	150	0.4	34	7	22	17000	72	87	0.14	18	15	13	24	230
12	2003.3	18000	6	170	0.1	33	6	22	15000	70	80	0.13	17	15	13	22	170
13	2002.6	19000	5	160	0.1	34	6	21	16000	73	76	0.13	17	14	12	23	140
14	2001.8	19000	5	160	0.1	34	6	21	16000	69	76	0.13	17	14	16	24	140
15	2001.1	18000	2.5	160	0.1	33	6	20	17000	68	75	0.13	16	14	16	24	130
16	2000.4	19000	6	170	1	33	9	21	17000	75	100	0.13	21	17	16	24	270
17	1999.7	18000	6	170	0.6	32	8	22	16000	86	100	0.13	19	17	16	25	230
18	1998.9	18000	5	180	0.4	31	7	20	17000	80	120	0.12	17	19	19	24	180
19	1998.2	19000	6	190	1	32	9	22	16000	94	130	0.13	21	21	16	26	340
20	1997.5	17000	6	160	0.3	30	6	24	17000	120	90	0.14	16	16	22	24	160
21	1996.8	19000	6	180	0.7	32	9	19	17000	67	130	0.12	21	19	14	26	320
22	1996.0	18000	7	170	0.5	31	8	17	20000	60	110	0.1	20	18	16	26	270
23	1995.3	18000	2.5	160	0.4	31	7	19	17000	70	92	0.12	17	16	11	23	170
24	1994.6	18000	6	190	0.6	32	9	20	16000	75	120	0.12	21	19	11	24	330
25	1993.9	17000	6	210	0.5	29	9	19	15000	64	140	0.11	20	21	12	23	320
26	1993.1	18000	6	170	0.5	30	10	19	15000	67	150	0.11	21	19	11	24	310
27	1992.4	18000	6	160	0.5	31	10	21	16000	78	150	0.12	20	18	11	25	260
28	1991.7	18000	6	160	0.5	30	10	22	16000	79	150	0.12	20	17	13	24	270
29	1991.0	15000	8	130	0.5	26	14	23	18000	82	220	0.11	21	19	12	27	310
30	1990.2	14000	7	120	0.5	26	11	32	16000	79	160	0.11	19	16	11	26	290
31	1989.5	16000	7	150	0.4	27	9	30	19000	70	200	0.1	18	16	10	26	220
32	1988.8	19000	6	170	0.4	30	10	17	21000	63	320	0.11	19	17	11	28	180
33	1988.1	16000	11	130	0.6	27	12	25	23000	100	350	0.12	22	17	20	27	420

Depth	Year	Metal concentrations (mg kg^{-1})															
		Al	As	Ba	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Ni	Sr	Ti	V	Zn
34	1987.3	16000	9	160	0.5	29	9	23	22000	95	200	0.12	18	16	15	26	310
35	1986.6	18000	8	160	0.5	31	11	21	23000	85	190	0.1	21	16	17	28	290
36	1985.9	17000	9	150	0.6	28	12	24	19000	86	160	0.11	22	16	11	26	310
37	1985.2	18000	13	140	0.8	32	15	29	19000	130	210	0.15	26	20	11	29	550
38	1984.4	17000	15	150	0.7	30	14	27	28000	150	280	0.14	25	21	15	31	540
39	1983.7	19000	9	150	0.5	32	11	21	24000	90	200	0.12	23	17	12	30	280
40	1983.0	16000	2.5	150	0.3	29	10	16	18000	48	130	0.09	19	15	11	25	120
41	1982.3	16000	7	140	0.3	29	11	17	19000	56	150	0.11	20	15	12	27	180
42	1981.5	17000	6	150	0.4	32	11	18	19000	61	130	0.11	21	15	11	27	180
43	1980.8	18000	8	170	0.4	32	13	18	21000	59	150	0.12	23	17	11	29	180
44	1980.1	14000	5	130	0.3	31	11	17	19000	41	130	0.1	24	13	20	26	150
45	1979.4	15000	7	140	0.2	27	13	21	25000	53	120	0.1	39	23	7	19	170
46	1979.0	16000	2.5	130	0.1	26	11	15	19000	30	86	0.07	28	18	6	19	120
47	1978.1	15000	2.5	130	0.1	25	10	16	20000	28	89	0.07	31	23	8	16	110
48	1976.2	16000	8	160	0.4	29	12	19	19000	72	130	0.13	26	15	10	25	210
49	1974.4	19000	8	160	0.6	36	11	20	20000	56	130	0.11	25	16	10	28	270
50	1972.6	14000	11	140	0.8	45	12	26	19000	61	150	0.13	31	16	16	26	370
51	1972.0	18000	18	170	0.9	36	10	26	25000	76	110	0.16	23	14	9	29	330
52	1969.9	16000	12	150	1.1	43	10	21	22000	43	110	0.13	24	14	12	26	250
53	1966.9	16000	15	150	1.3	41	13	24	22000	57	140	0.13	27	16	13	29	300
54	1964.0	16000	9	150	0.4	29	10	14	18000	37	110	0.08	17	13	15	28	120
55	1961.0	14000	6	120	0.3	27	9	13	16000	24	94	0.07	16	12	18	24	85
56	1958.0	17000	9	150	0.4	31	8	14	20000	32	79	0.09	18	11	21	28	97
57	1954.4	18000	15	170	0.9	35	13	21	20000	47	130	0.12	24	16	14	30	180
58	1950.8	18000	9	170	0.4	30	12	16	19000	37	110	0.09	20	15	11	28	130
59	1947.2	16000	8	160	0.3	28	10	14	18000	33	100	0.08	18	15	12	26	110
60	1943.6	17000	9	160	0.3	28	10	14	19000	34	96	0.07	17	14	6	25	100
61	1940.0	17000	9	160	0.2	28	9	14	19000	33	91	0.08	17	14	11	27	88
62	1936.4	16000	10	160	0.2	27	9	14	19000	33	96	0.07	17	14	13	25	87
63	1932.8	16000	11	160	0.2	27	11	15	18000	34	110	0.08	18	15	10	26	100
64	1929.2	17000	11	160	0.1	27	8	16	20000	36	85	0.1	16	12	12	26	78
65	1925.6	16000	10	160	0.1	26	11	14	18000	31	110	0.09	17	14	8	25	84
66	1922.0	17000	10	160	0.2	31	9	14	21000	30	120	0.07	19	15	11	27	79
67	1921.2	16000	8	160	0.1	33	10	13	21000	27	170	0.05	22	17	15	27	73
68	1920.3	18000	22	170	0.2	29	12	16	22000	38	150	0.07	21	16	9	29	97
69	1919.5	18000	27	170	0.2	29	14	17	23000	39	150	0.09	21	16	12	29	110

Depth	Year	Metal concentrations (mg kg^{-1})															
		Al	As	Ba	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Ni	Sr	Ti	V	Zn
70	1918.7	16000	11	160	0.1	28	10	14	21000	33	92	0.08	17	13	12	28	74
71	1917.8	15000	11	150	0.1	26	10	15	18000	35	99	0.06	17	13	9	25	75
72	1917.0	13000	10	140	0.1	25	9	16	18000	39	95	0.06	15	13	10	25	58
73	1916.2	15000	10	160	0.1	25	11	12	17000	25	110	0.06	17	14	8	24	80
74	1915.3	14000	8	150	0.1	24	10	11	16000	22	100	0.06	16	13	9	23	67
75	1914.5	16000	8	180	0.1	27	11	12	20000	25	200	0.06	18	15	13	27	72
76	1913.7	15000	8	150	0.1	26	9	11	22000	23	130	0.06	15	12	12	27	57
77	1912.8	14000	7	160	0.1	25	11	10	18000	22	140	0.05	16	13	9	25	61
78	1912.0	14000	6	150	0.1	24	9	9	16000	18	110	0.025	15	12	20	24	49
79	1911.2	14000	6	150	0.1	24	9	9	18000	19	160	0.025	14	13	8	24	49
80	1910.3	13000	6	150	0.1	24	9	10	17000	20	140	0.025	14	13	8	23	51
81	1909.5	14000	6	160	0.1	25	10	10	19000	23	180	0.06	16	13	9	25	57
82	1908.7	15000	6	170	0.1	26	11	11	20000	23	200	0.06	16	14	11	26	52
83	1907.8	16000	6	180	0.1	28	11	11	21000	24	220	0.07	17	14	9	26	52
84	1907.0	15000	6	170	0.1	27	9	10	18000	21	120	0.06	17	13	10	25	48
85	1906.2	14000	6	150	0.1	25	8	10	18000	20	100	0.06	15	12	10	24	41
86	1905.3	14000	6	170	0.1	25	9	10	17000	19	120	0.06	16	13	14	25	45
87	1904.5	13000	6	150	0.1	24	8	9	16000	18	110	0.05	15	12	19	24	42
88	1903.7	15000	7	180	0.1	27	9	11	20000	22	200	0.07	16	14	14	26	46
89	1902.8	16000	6	190	0.1	28	11	12	23000	23	270	0.07	17	15	16	26	48
90	1902.0	12000	2.5	140	0.1	21	8	8	15000	16	120	0.025	13	12	17	21	36
91	1901.2	14000	7	160	0.1	25	9	11	18000	22	98	0.06	15	13	9	24	51
92	1900.3	15000	6	170	0.1	26	10	10	19000	22	150	0.06	16	14	8	24	52
93	1899.5	15000	6	180	0.1	27	10	10	20000	21	200	0.06	16	15	10	25	52
94	1898.7	14000	6	160	0.1	26	9	10	20000	20	190	0.07	15	14	13	24	47
95	1897.8	14000	5	160	0.1	26	9	10	16000	20	96	0.06	15	14	8	24	46
96	1897.0	15000	6	170	0.1	26	9	10	18000	22	92	0.06	15	14	9	25	49
W1																	
0	1927.2	25000	6	210	0.2	41	11	24	19000	85	110	0.15	27	22	86	34	200
1	1926.3	28000	6	190	0.1	42	10	23	20000	73	110	0.13	25	22	90	35	170
2	1925.3	27000	7	200	0.2	41	10	22	21000	76	110	0.13	25	22	80	35	220
3	1924.3	29000	10	210	0.6	44	14	25	23000	80	120	0.14	30	23	78	36	460
4	1923.3	27000	7	210	0.3	40	13	22	22000	63	110	0.12	30	21	54	33	290
5	1922.3	27000	7	220	0.3	40	12	22	22000	64	120	0.12	28	23	47	35	230
6	1921.4	27000	7	220	0.1	40	10	22	22000	67	120	0.13	24	23	52	35	160
7	1920.4	27000	7	220	0.1	40	9	22	22000	69	130	0.14	22	22	47	35	160

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Depth	Year	Metal concentrations (mg kg^{-1})															
		Al	As	Ba	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Ni	Sr	Ti	V	Zn
8	1919.4	27000	7	200	0.3	40	12	22	29000	73	180	0.13	21	22	50	37	150
9	1918.4	26000	10	220	0.7	41	9	29	27000	110	190	0.16	22	23	42	37	270
10	1917.4	27000	12	220	0.7	42	10	26	30000	97	190	0.14	25	23	75	39	480
11	1916.5	32000	16	280	0.8	47	16	33	31000	120	160	0.17	33	27	67	44	590
12	1915.5	29000	12	190	0.5	44	13	23	30000	84	150	0.14	29	23	40	41	280
13	1914.5	25000	12	180	0.2	39	10	18	26000	39	110	0.11	22	17	39	38	100
14	1913.5	30000	14	220	0.2	47	12	18	32000	36	170	0.1	26	20	68	45	85
15	1912.5	28000	27	200	0.1	39	12	18	30000	46	160	0.12	23	20	62	41	90
16	1911.6	24000	15	170	0.1	35	10	16	24000	37	110	0.1	19	17	50	35	71
17	1910.6	24000	13	180	0.1	35	11	14	24000	27	120	0.1	20	17	61	36	69
18	1909.6	27000	11	200	0.1	39	11	14	26000	28	120	0.11	21	19	73	40	68
19	1908.6	36000	10	190	0.1	37	11	13	27000	26	170	0.09	21	19	110	39	65
20	1907.6	25000	9	190	0.1	37	11	12	26000	23	190	0.08	21	18	110	38	56
21	1906.7	24000	9	180	0.1	36	10	12	25000	23	160	0.07	19	17	120	37	55
22	1905.7	25000	9	190	0.1	37	11	12	25000	25	170	0.09	20	18	94	38	59
24	1903.7	28000	10	220	0.1	41	12	13	27000	26	170	0.14	22	20	150	41	60
25	1902.7	27000	9	210	0.1	41	11	13	25000	25	130	0.12	22	19	120	41	55
26	1901.9	21000	8	160	0.1	33	9	11	21000	20	110	0.09	18	16	110	33	44
27	1901.6	23000	8	190	0.1	36	10	12	23000	22	130	0.1	20	17	140	36	48
28	1901.3	24000	9	200	0.1	38	10	13	26000	24	190	0.11	21	18	92	38	53
29	1901.1	27000	9	230	0.1	41	12	14	30000	27	280	0.11	22	20	99	40	55
30	1900.8	23000	8	170	0.1	35	10	11	22000	22	130	0.09	19	18	93	34	51
31	1900.5	25000	9	210	0.1	39	11	13	25000	27	120	0.1	21	19	34	37	62
32	1900.2	25000	9	190	0.1	38	11	12	25000	23	180	0.09	20	19	88	38	55
33	1899.9	30000	9	240	0.1	46	12	14	31000	28	230	0.12	24	22	83	45	64
34	1899.6	27000	8	210	0.1	41	11	12	29000	25	240	0.1	21	20	110	41	57
35	1899.3	22000	7	170	0.1	33	9	10	21000	20	110	0.08	18	16	71	33	47
36	1899.0	32000	10	250	0.1	46	12	13	27000	29	110	0.11	23	23	110	46	61
37	1898.7	26000	8	200	0.1	39	11	11	25000	24	130	0.1	20	20	47	38	53
38	1898.4	26000	8	210	0.1	39	11	12	24000	25	110	0.1	21	20	45	38	58
39	1898.1	25000	8	200	0.1	38	10	12	23000	24	96	0.1	20	20	100	38	54
40	1897.8	26000	8	200	0.1	38	10	12	23000	23	93	0.09	20	19	100	38	51
41	1897.6	27000	10	210	0.1	39	12	13	27000	29	210	0.11	21	21	110	40	60
42	1897.3	25000	10	200	0.1	37	11	13	29000	30	270	0.13	20	20	43	38	64
43	1897.0	27000	11	210	0.1	38	11	13	27000	31	210	0.13	20	21	82	39	62
44	1896.7	25000	10	200	0.1	36	10	13	23000	28	91	0.12	19	19	65	37	66

Depth	Year	Metal concentrations (mg kg^{-1})															
		Al	As	Ba	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Ni	Sr	Ti	V	Zn
45	1896.4	26000	10	210	0.1	37	10	13	23000	29	93	0.12	20	21	65	38	65
46	1896.1	26000	11	210	0.1	38	11	13	27000	28	180	0.12	21	21	89	40	58
47	1895.8	22000	8	170	0.1	34	10	11	23000	21	140	0.08	18	17	68	35	41
48	1895.5	27000	10	210	0.1	39	11	12	27000	24	190	0.1	19	21	100	39	47
49	1895.2	24000	10	190	0.1	35	11	11	25000	23	180	0.11	19	19	58	37	51
50	1894.8	20000	7	160	0.1	31	10	11	21000	19	120	0.09	17	17	48	32	40
51	1893.8	22000	7	160	0.1	33	9	10	23000	21	150	0.12	17	17	60	33	45
52	1892.8	21000	8	160	0.1	31	9	10	26000	21	230	0.12	17	17	72	33	44
53	1891.8	22000	7	170	0.1	33	10	11	26000	21	230	0.12	18	18	78	35	46
54	1890.8	21000	7	170	0.1	31	9	10	22000	22	130	0.12	16	18	37	32	42
55	1889.8	20000	7	150	0.1	30	9	9	20000	18	120	0.11	16	16	79	32	38
56	1888.9	20000	6	150	0.1	30	8	10	19000	19	91	0.08	15	16	63	31	37
61.75	1886.0	23000	8	170	0.1	34	9	11	22000	21	100	0.15	18	18	69	35	42
71.75	1880.8	23000	8	180	0.1	36	10	11	24000	21	180	0.15	19	20	43	35	38
81.75	1875.7	29000	8	220	0.1	42	12	12	29000	23	250	0.16	22	22	88	42	44
91.75	1870.9	26000	8	220	0.1	41	12	12	26000	23	160	0.19	22	21	85	41	46
101.75	1866.0	21000	5	160	0.1	36	9	10	23000	16	160	0.11	19	18	130	34	34
111.75	1860.4	24000	6	180	0.1	36	10	10	21000	17	100	0.14	19	19	83	35	36
121.75	1854.8	22000	7	170	0.1	35	11	10	20000	15	110	0.13	19	17	88	35	32
131.75	1850.2	21000	6	160	0.1	33	9	9	20000	15	160	0.17	18	18	120	33	32
141.75	1845.8	20000	6	160	0.1	33	9	9	20000	14	190	0.18	17	17	130	32	30
151.75	1840.9	21000	5	190	0.1	35	10	9	20000	13	170	0.12	19	18	200	34	35
161.75	1815.3	23000	5	200	0.1	35	10	10	19000	15	130	0.23	19	20	120	35	34
171.75	1778.7	27000	6	280	0.1	37	11	13	19000	14	150	0.06	22	25	200	39	58
181.75	1742.1	27000	2.5	260	0.1	35	10	12	17000	13	160	0.025	20	23	140	37	56
201.5	1701.7	27000	2.5	290	0.1	36	14	14	18000	13	200	0.05	23	26	130	40	64

Table S2. PAH and OCP concentrations in W4 and W1

Depth (cm)	Year	PAHs (mg kg^{-1})														
		NA	ACL	AC	FL	PHE	AN	FLA	PY	BaA	CHR	BbkFA	BaP	IP	DBahA	BghiP
W4																
2	2010.9	0.025	<0.01	<0.01	0.048	0.063	0.012	0.13	0.13	0.054	0.07	0.069	0.025	0.071	0.017	0.1
6	2008.0	0.027	0.011	<0.01	0.035	0.063	0.012	0.13	0.14	0.067	0.077	0.075	0.034	0.089	0.021	0.13
10	2005.1	0.027	<0.01	<0.01	0.067	0.072	0.014	0.13	0.14	0.062	0.073	0.076	0.033	0.092	0.018	0.13
18	1999.3	0.022	<0.01	<0.01	0.021	0.055	0.01	0.1	0.11	0.052	0.063	0.057	0.025	0.089	0.024	0.13
22	1996.4	0.021	<0.01	<0.01	0.021	0.056	0.011	0.11	0.12	0.051	0.064	0.06	0.025	0.089	0.02	0.15
26	1993.5	0.021	<0.01	<0.01	0.018	0.049	<0.01	0.1	0.1	0.049	0.059	0.056	0.025	0.09	0.022	0.13
30	1990.6	0.023	<0.01	<0.01	0.066	0.063	0.012	0.087	0.085	0.045	0.057	0.079	0.03	0.11	0.025	0.16
34	1987.7	0.019	<0.01	<0.01	0.033	0.055	0.01	0.091	0.087	0.046	0.053	0.072	0.038	0.11	0.023	0.16
38	1984.8	0.018	<0.01	<0.01	0.021	0.041	<0.01	0.062	0.063	0.032	0.039	0.039	0.017	0.062	0.022	0.1
42	1981.9	0.017	<0.01	<0.01	0.011	0.043	<0.01	0.064	0.07	0.04	0.047	0.043	0.024	0.083	0.023	0.11
46	1978.4	0.01	<0.01	<0.01	<0.01	0.028	<0.01	0.053	0.057	0.027	0.027	0.02	<0.01	0.041	0.012	0.058
50	1971.0	0.035	0.012	0.011	0.041	0.12	0.019	0.16	0.16	0.063	0.076	0.061	0.034	0.1	0.031	0.14
54	1959.3	0.035	0.013	0.011	0.03	0.14	0.03	0.17	0.16	0.083	0.096	0.071	0.038	0.13	0.038	0.17
58	1945.4	0.037	0.017	0.011	0.025	0.13	0.029	0.24	0.23	0.1	0.12	0.093	0.051	0.17	0.05	0.22
62	1931	0.043	0.027	<0.01	0.026	0.15	0.034	0.33	0.27	0.15	0.17	0.14	0.079	0.26	0.074	0.34
66	1920.8	0.027	0.021	<0.01	0.02	0.14	0.031	0.32	0.27	0.15	0.16	0.13	0.076	0.25	0.066	0.31
70	1917.4	0.059	0.026	0.016	0.038	0.2	0.034	0.35	0.35	0.14	0.16	0.13	0.069	0.23	0.065	0.3
74	1914.1	0.022	0.005	<0.01	0.018	0.07	0.012	0.13	0.12	0.06	0.067	0.044	0.021	0.08	0.024	0.1
78	1910.8	0.023	0.011	<0.01	0.021	0.11	0.019	0.19	0.18	0.1	0.12	0.1	0.053	0.15	0.043	0.18
86	1904.1	0.014	<0.01	<0.01	0.011	0.058	<0.01	0.11	0.11	0.056	0.059	0.051	0.026	0.072	0.02	0.089
90	1900.8	0.012	<0.01	<0.01	0.01	0.067	0.011	0.13	0.13	0.064	0.071	0.061	0.034	0.084	0.024	0.1
94	1897.4	0.015	<0.01	<0.01	0.015	0.11	0.017	0.19	0.18	0.11	0.12	0.11	0.061	0.22	0.056	0.27
W1																
2	1925.8	0.046	<0.01	<0.01	0.019	0.066	0.011	0.13	0.13	0.048	0.072	0.058	0.033	0.079	0.012	0.11
6	1921.9	0.057	<0.01	<0.01	0.026	0.082	<0.01	0.14	0.14	0.053	0.075	0.051	0.027	0.062	<0.01	0.079
10	1917.9	0.039	<0.01	0.014	0.018	0.091	0.09	0.15	0.14	0.08	0.082	<0.01	0.12	0.78	<0.01	0.8
14	1914.0	0.088	0.028	<0.01	0.038	0.29	0.046	0.62	0.59	0.21	0.27	0.19	0.11	0.26	0.056	0.31
18	1910.1	0.047	0.012	0.014	0.035	0.17	0.026	0.32	0.3	0.11	0.15	0.1	0.053	0.11	0.029	0.13
22	1906.2	0.027	<0.01	<0.01	0.023	0.1	0.016	0.22	0.21	0.079	0.11	0.082	0.043	0.071	0.016	0.069
26	1902.5	0.025	<0.01	<0.01	0.016	0.083	0.011	0.16	0.16	0.062	0.077	0.064	0.034	0.049	0.017	0.053
30	1900.9	0.018	<0.01	<0.01	0.021	0.12	0.015	0.28	0.28	0.14	0.15	0.2	0.094	0.053	0.013	0.078
34	1899.7	0.031	<0.01	<0.01	0.021	0.15	0.02	0.33	0.34	0.12	0.17	0.077	0.073	0.12	0.055	0.13
38	1898.6	0.029	0.011	<0.01	0.022	0.16	0.022	0.37	0.36	0.14	0.19	0.15	0.079	0.13	0.059	0.14
42	1897.4	0.035	0.017	0.013	0.03	0.23	0.031	0.52	0.49	0.2	0.27	0.21	0.11	0.22	0.11	0.24

Depth (cm)	Year	PAHs (mg kg^{-1})														
		NA	ACL	AC	FL	PHE	AN	FLA	PY	BaA	CHR	BbkFA	BaP	IP	DBahA	BghiP
46	1896.2	0.04	0.026	0.018	0.057	0.5	0.055	1.2	1.2	0.47	0.56	0.75	0.42	0.26	0.059	0.32
50	1894.8	0.041	0.023	0.016	0.048	0.38	0.052	0.73	0.71	0.3	0.38	0.27	0.17	0.31	0.092	0.33
54	1891.3	<0.01	<0.01	<0.01	0.01	0.12	<0.01	0.3	0.31	0.15	0.16	0.1	0.061	0.084	<0.01	0.13
58	1888.1	0.029	0.015	0.01	0.035	0.22	0.031	0.4	0.38	0.16	0.18	0.14	0.084	0.13	0.039	0.14
93	1870.4	0.018	<0.01	<0.01	0.015	0.061	<0.01	0.1	0.091	0.039	0.042	0.034	0.018	0.03	<0.01	0.032
143	1845.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
194.5	1734.2	0.092	<0.01	<0.01	0.037	0.067	<0.01	0.054	0.032	0.034	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table S3. OCP concentrations in W4 and W1

Depth (cm)	Year	OCPs (mg kg^{-1})				
		trans-Chlordane	Dieldrin	pp-DDE	pp-DDD	pp-DDT
W4						
2	2010.9	0.0078	0.0015	0.018	<0.001	<0.001
6	2008.0	0.0063	0.0012	0.012	<0.001	<0.001
10	2005.1	<0.001	<0.001	<0.001	<0.001	<0.001
18	1999.3	0.0059	0.0021	0.0093	<0.001	<0.001
22	1996.4	0.004	0.0013	0.0076	<0.001	<0.001
26	1993.5	<0.001	<0.001	0.011	<0.001	<0.001
46	1978.4	<0.001	<0.001	0.0095	<0.001	<0.001
50	1971.0	0.03	0.012	0.054	0.038	0.11
54	1959.3	<0.001	<0.001	0.019	<0.001	<0.001
58	1945.4	<0.001	<0.001	0.028	<0.001	<0.001
62	1931.0	<0.001	<0.001	0.03	<0.001	<0.001
66	1920.8	<0.001	<0.001	0.025	<0.001	<0.001
70	1917.4	<0.001	<0.001	0.0013	<0.001	<0.001
74	1914.1	<0.001	<0.001	<0.001	<0.001	<0.001
78	1910.8	<0.001	<0.001	<0.001	<0.001	<0.001
86	1904.1	<0.001	<0.001	<0.001	<0.001	<0.001
90	1900.8	<0.001	<0.001	<0.001	<0.001	<0.001
94	1897.4	<0.001	<0.001	<0.001	<0.001	<0.001
W1						
2	1925.8		0.051	0.027	0.062	0.0031
6	1921.9		<0.001	0.12	0.78	0.0029
10	1917.9		0.19	0.11	0.26	0.0021
14	1914.0		<0.001	0.053	0.11	0.0015

Depth (cm)	Year	OCPs (mg kg^{-1})				
		trans-Chlordane	Dieldrin	pp-DDE	pp-DDD	pp-DDT
18	1910.1		<0.001	<0.001	<0.001	<0.001
22	1906.2		<0.001	<0.001	<0.001	<0.001
26	1902.5		<0.001	<0.001	<0.001	<0.001
30	1900.9		<0.001	<0.001	<0.001	<0.001
34	1899.7		<0.001	<0.001	<0.001	<0.001
38	1898.6		<0.001	<0.001	<0.001	<0.001
42	1897.4		<0.001	<0.001	<0.001	<0.001
46	1896.2		<0.001	<0.001	<0.001	<0.001
50	1894.8		<0.001	<0.001	<0.001	<0.001
54	1891.3		<0.001	<0.001	<0.001	<0.001
58	1888.1		<0.001	<0.001	<0.001	<0.001
93	1870.4		<0.001	<0.001	<0.001	<0.001
143	1845.4		<0.001	<0.001	<0.001	<0.001
194.5	1734.2		<0.001	<0.001	<0.001	<0.001

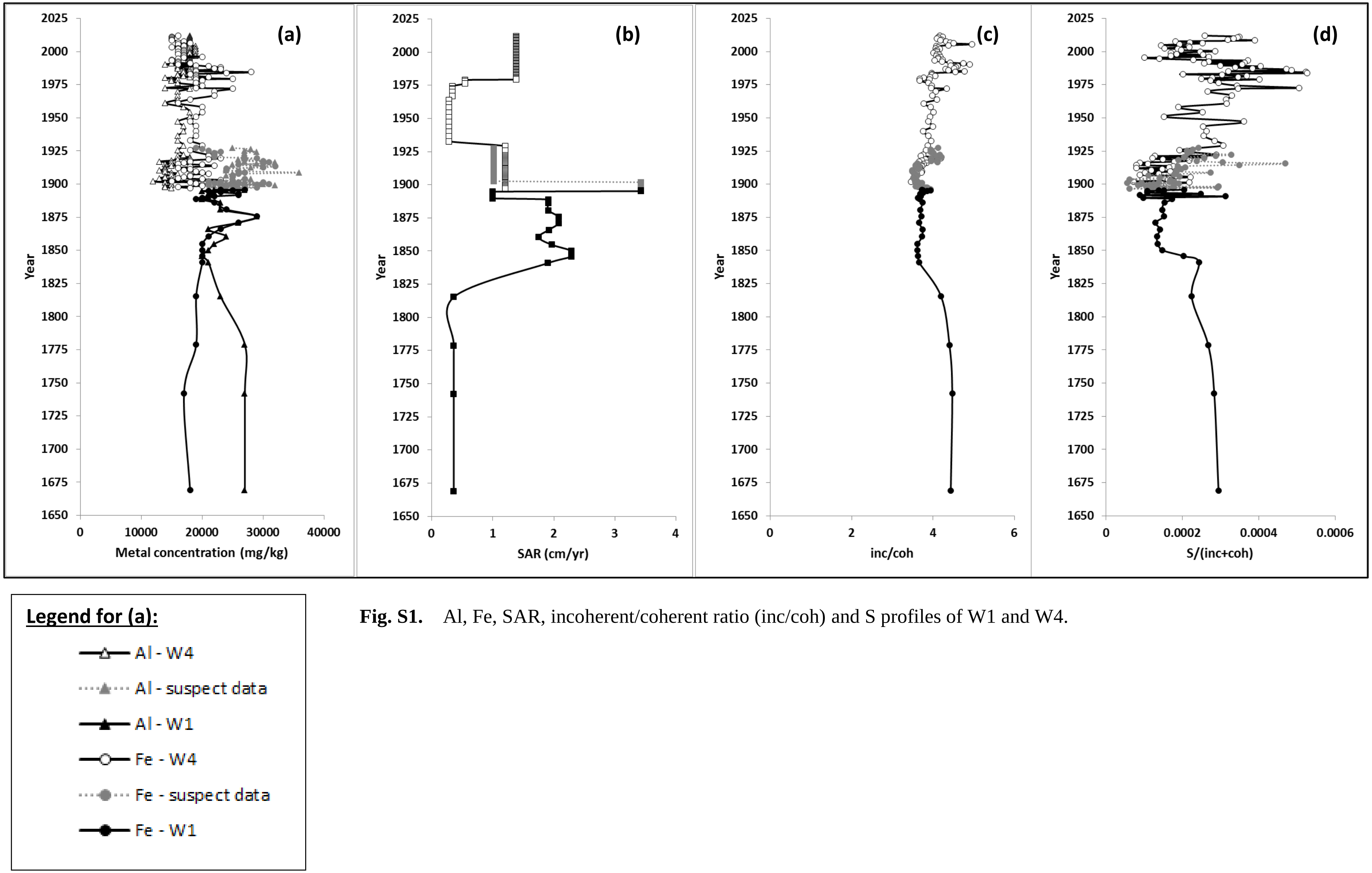

Fig. S1. Al, Fe, SAR, incoherent/coherent ratio (inc/coh) and S profiles of W1 and W4.

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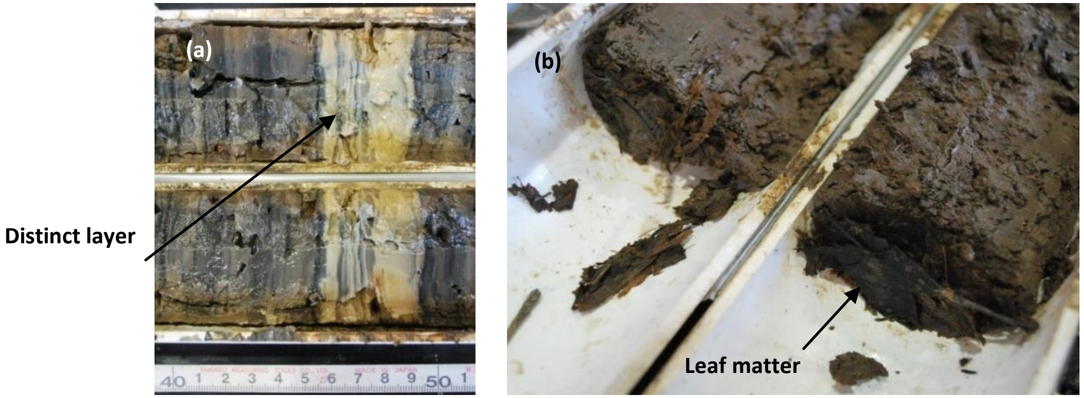

Fig. S2. Photographs of significant features from sediment cores W1 and W4 showing (*a*) the distinct clay layer in W4, and (*b*) leaf matter on the surface of W4.

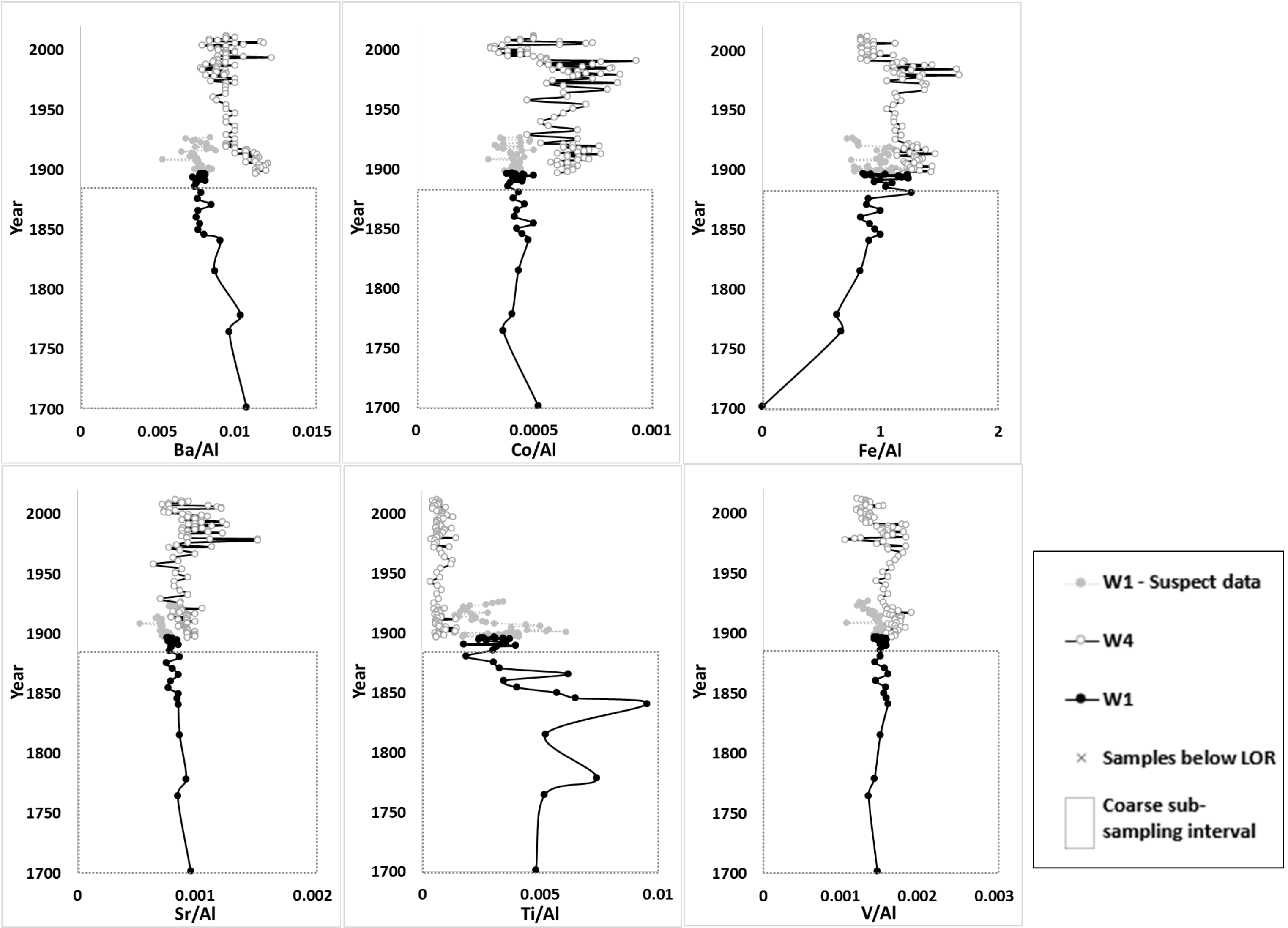

Fig. S3. Heavy metal profiles of W1 and W4 not included in manuscript.

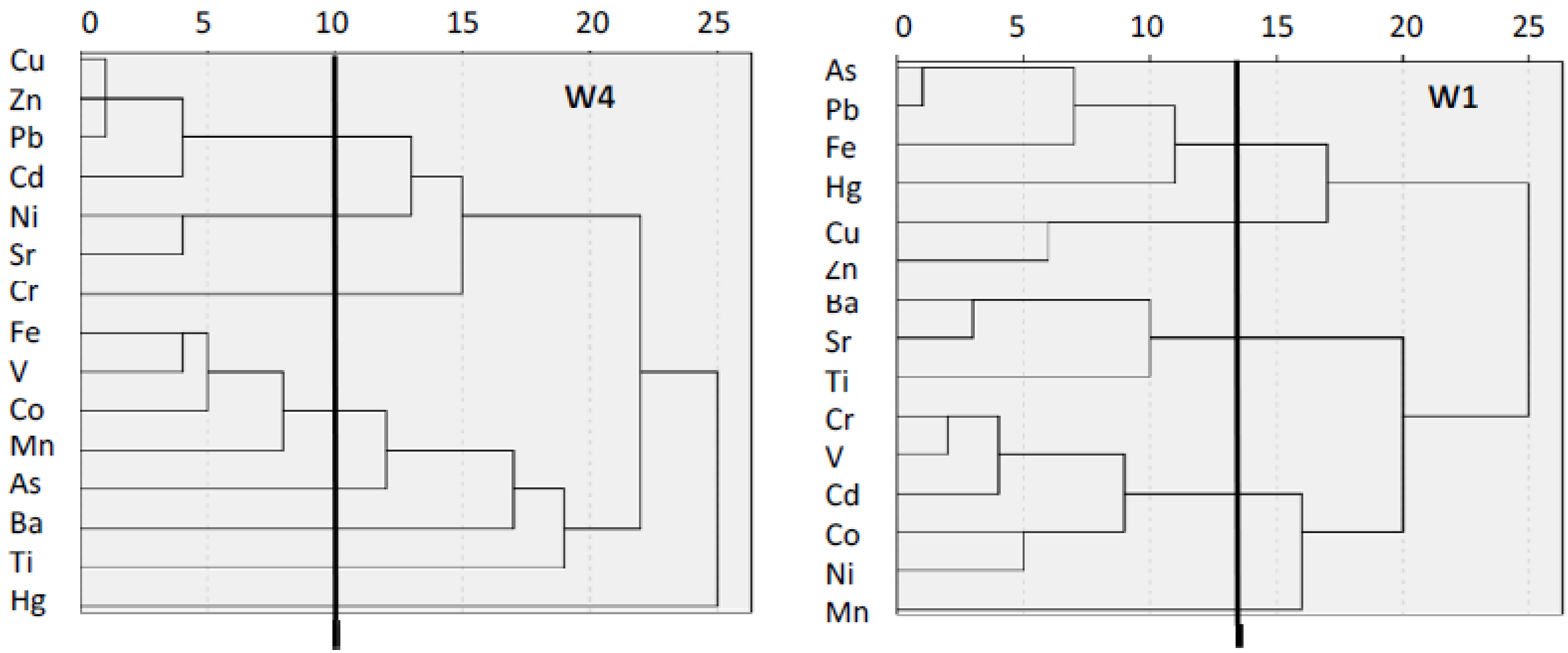

Fig. S4. Dendrograms from cluster analysis for W4 and W1 (thick lines represent the cut-off point of the dendrograms).

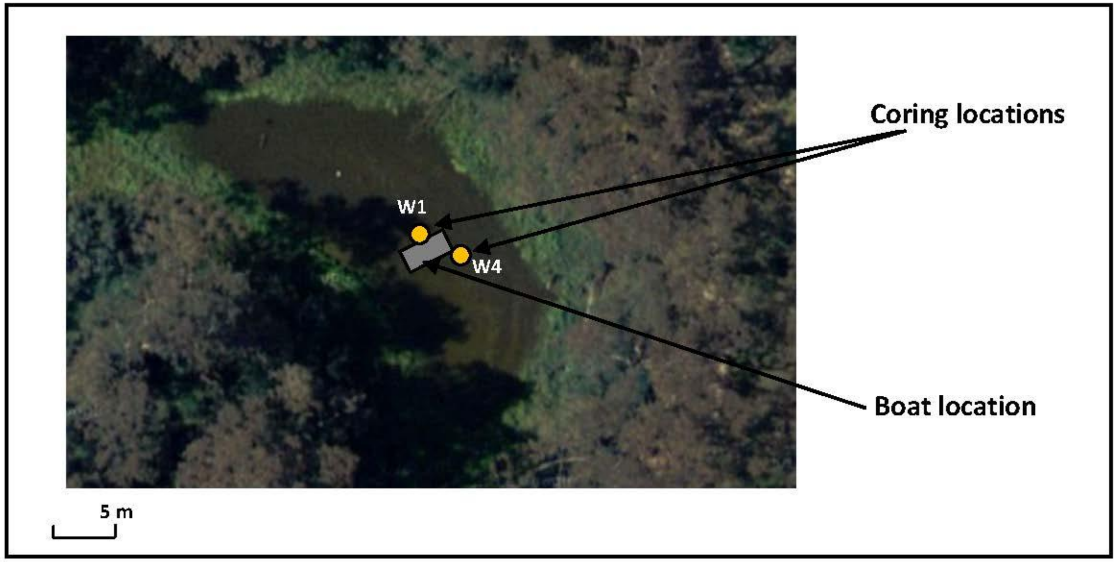

Fig. S5. Satellite image of Willsmere Billabong, showing location of boat and coring.

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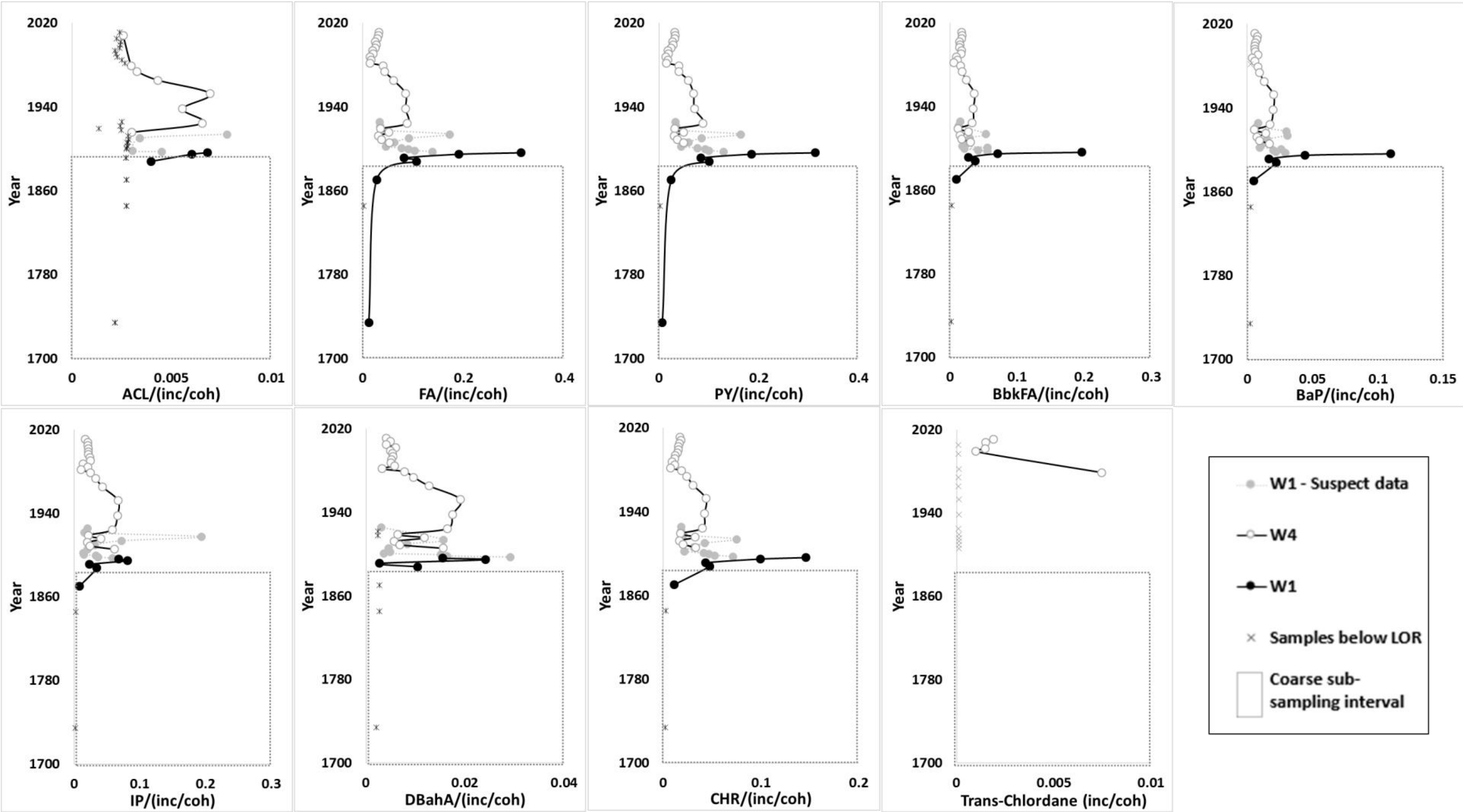

Fig. S6. PAH and OCP profiles of W1 and W4 not included in manuscript.

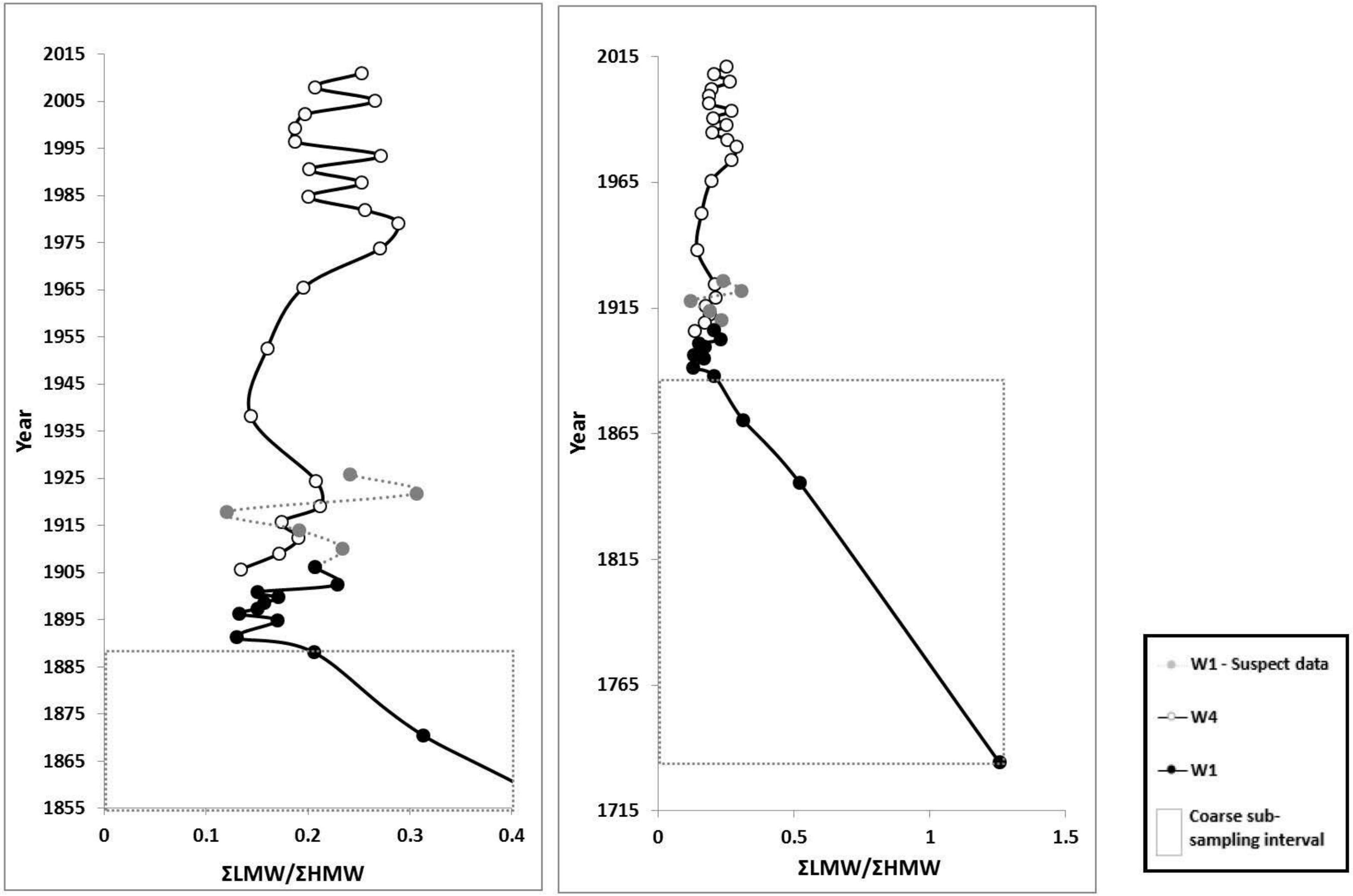

Fig. S7. Profile of the ratio of the sum of low molecular weight PAHs to high molecular weight PAHs for W1 and W4.