Supplementary Materials

Spatial–Temporal Distribution and Interrelationship of Sulfur and Iron Compounds in Seabed Sediments: A Case Study in the Closed Section of Mikawa Bay, Japan

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Table S1. Original data used to design the vertical profiles of temperature, salinity, and dissolved oxygen in the water column.

Station	1					2					3					4				
Date	Depth (m)	Temp. (˚C)	Sal.	DO ($mg \cdot L^{-1}$)	DO (%)	Depth (m)	Temp. (˚C)	Sal.	DO ($mg \cdot L^{-1}$)	DO (%)	Depth (m)	Temp. (˚C)	Sal.	DO ($mg \cdot L^{-1}$)	DO (%)	Depth (m)	Temp. (˚C)	Sal.	DO ($mg \cdot L^{-1}$)	DO (%)
Apr. 23	0	16.9	23.7	12.2	145.6	-	N.D.	N.D.	N.D.	N.D.	0	15.5	27.6	9.7	114.6	0	14.9	27.7	8.4	98.5
	2	15.1	29.0	11.4	135.8	-	N.D.	N.D.	N.D.	N.D.	2	14.4	28.1	8.6	100.4	2	14.6	27.9	8.0	93.8
	4	14.8	29.8	10.3	122.1	-	N.D.	N.D.	N.D.	N.D.	4	14.3	29.5	7.7	89.8	4	14.3	28.9	7.7	90.3
	6	14.7	30.2	9.6	114.2	-	N.D.	N.D.	N.D.	N.D.	6	14.2	29.6	7.4	86.0	6	14.2	29.2	7.4	86.6
	8	14.5	30.6	8.1	96.2	-	N.D.	N.D.	N.D.	N.D.	8	14.0	29.7	7.0	81.1	8	13.7	29.6	6.2	71.6
	10	14.1	30.7	6.8	79.5	-	N.D.	N.D.	N.D.	N.D.	10	13.7	29.9	6.0	69.8	8.7	13.6	29.7	5.9	68.2
	10.3	14.2	30.7	6.8	80.1	-	N.D.	N.D.	N.D.	N.D.	11.4	13.6	29.6	4.7	53.8					
May. 27	0	21.6	30.4	8.8	119.7	0	22.8	29.0	9.8	135.3	0	22.8	28.6	10.6	144.9	0	22.6	28.6	8.7	118.5
	2	21.4	30.4	9.1	122.3	2	22.6	29.0	10.0	136.6	2	21.8	28.8	8.1	109.5	2	22.3	28.8	8.6	117.2
	4	20.5	30.6	8.6	114.8	4	21.1	29.2	9.4	125.9	4	19.5	30.3	6.2	80.5	4	18.7	30.7	3.1	39.3
	6	19.1	31.4	7.0	91.4	6	18.8	30.9	3.6	46.4	6	18.4	31.0	3.7	47.1	6	18.3	31.3	2.4	31.0
	8	18.2	32.0	4.6	59.4	8	18.5	31.3	3.8	48.4	8	18.1	31.6	3.4	43.0	8	18.1	31.5	2.5	32.4
	10	17.7	32.1	3.0	38.4	10	18.2	31.7	3.9	49.8	10	18.0	31.7	3.4	42.9	8.8	18.1	31.6	2.3	29.1
	11.09	17.7	32.1	2.9	37.3	12	18.0	31.9	3.6	46.2	11.8	18.0	31.8	3.0	38.8					
						13.4	17.9	31.9	3.6	45.7										
Jun. 29	0	21.3	31.7	7.1	96.0	0	21.3	29.5	10.0	134.0	0	21.5	27.9	7.6	101.0	0	21.5	27.4	6.2	82.9
	2	21.2	31.7	6.8	91.9	2	21.5	31.0	6.9	93.5	2	21.1	30.4	6.8	91.3	2	21.0	30.6	5.8	78.6
	4	21.1	31.7	6.3	85.5	4	21.4	31.4	6.1	82.9	4	21.2	30.9	6.1	83.0	4	21.2	31.0	6.4	86.6
	6	21.1	31.8	6.4	87.5	6	21.4	31.4	5.9	80.9	6	21.2	31.2	6.2	84.6	6	21.2	31.2	6.3	85.5
	8	21.0	31.9	6.0	81.5	8	21.3	31.6	5.5	74.9	8	21.2	31.3	6.3	84.9	6.7	21.1	31.4	6.0	81.0
	9.04	20.9	32.1	6.0	80.8	10	21.0	31.6	5.2	70.0	10.0	20.6	31.7	5.6	75.6					
						11.8	20.4	31.9	3.8	50.8										
Jul. 30	0	29.8	25.5	7.9	119.3	0	30.5	23.7	10.6	161.6	0	30.8	23.1	14.0	214.1	0	30.4	22.7	11.8	178.2
	2	29.8	25.5	7.9	119.8	2	29.7	23.9	8.5	128.5	2	30.7	23.1	13.3	202.5	2	29.3	22.8	5.9	87.2
	4	29.0	26.0	7.2	108.0	4	29.2	24.0	6.9	102.3	4	27.9	26.0	5.0	73.3	4	27.8	21.8	4.2	60.5
	6	24.0	29.8	0.0	0.6	6	25.5	23.2	2.9	39.8	6	23.5	30.3	0.2	3.4	6	24.6	22.6	0.8	10.7
	8	22.8	31.0	0.5	6.3	8	23.0	23.9	0.3	3.5	8	23.1	30.5	0.2	3.1	8	23.0	23.5	0.0	0.5
	10.48	21.9	31.0	0.2	2.9	11.0	22.3	24.8	0.4	5.5	10	22.6	31.0	0.1	0.8	9.5	22.9	23.7	0.1	0.7
Aug. 10	0	30.2	27.7	9.4	145.3	0	29.6	28.8	9.7	149.7	0	29.6	29.1	9.9	153.8	0	28.3	29.1	9.4	142.2
	2	29.7	27.9	9.6	148.2	2	26.5	30.1	7.5	110.4	2	27.8	29.5	9.1	136.3	2	27.0	29.6	3.8	56.3
	4	26.0	30.9	9.6	141.5	4	25.3	30.7	3.9	57.3	4	24.5	31.0	1.8	25.8	4	25.0	30.7	1.6	23.4
	6	24.5	31.6	6.2	89.7	6	24.0	31.2	1.3	17.8	6	23.4	31.4	0.2	3.4	6	23.0	31.5	0.1	0.8
	8	23.0	32.1	1.9	26.4	8	23.4	31.5	0.6	7.8	8	22.6	31.8	0.2	2.1	8	22.3	31.8	0.1	0.7
	9.65	22.2	32.2	0.3	4.7	11.6	22.2	32.1	0.1	0.8	10.7	22.2	32.1	0.1	0.7	10	22.1	31.9	0.1	0.7
																12	22.1	32.0	0.1	0.7
																14.1	22.6	31.7	0.1	0.8
Sep. 16	0	24.4	25.3	10.4	143.5	0	24.6	24.5	7.6	105.6	0	24.2	24.0	9.1	124.7	0	24.2	24.6	6.4	88.3
	2	24.4	25.4	10.0	139.1	2	24.8	26.0	6.6	92.0	2	24.6	26.4	5.5	76.8	2	24.3	25.2	4.6	64.1
	4	24.5	26.3	7.9	110.0	4	24.6	28.1	3.4	48.6	4	24.6	27.3	4.0	56.8	4	24.6	26.9	3.7	52.5
	6	24.6	28.0	4.9	69.5	6	24.6	28.6	2.2	31.2	6	24.7	27.9	2.6	36.6	6	24.6	28.0	2.4	33.2
	8	24.6	29.5	2.8	39.6	8	24.4	28.9	2.0	28.8	8	24.6	28.2	2.7	37.7	8	24.7	28.2	2.0	27.8
	11	24.8	30.2	1.0	14.4	11.0	24.6	29.5	1.3	18.4	10.0	24.5	28.5	2.5	35.7					
Oct. 26	0	19.6	30.3	7.3	95.4	0	19.5	28.1	7.7	98.8	0	19.6	29.1	7.2	94.0	0	17.3	27.7	9.1	112.3
	2	19.6	30.3	7.3	95.8	2	19.5	28.8	7.0	90.1	2	19.5	29.1	7.0	90.6	2	17.0	27.9	7.6	92.8
	4	19.6	30.3	7.2	94.0	4	19.3	29.0	6.6	85.4	4	19.5	29.2	6.5	84.7	4	17.1	28.4	6.7	82.8
	6	19.6	30.3	7.1	92.3	6	19.4	29.2	6.4	83.2	6	19.5	29.2	6.4	83.4	6	18.0	28.7	6.9	86.2
	8.05	19.7	30.6	6.7	88.4	8	19.4	29.4	6.4	83.0	8	19.5	29.2	6.4	82.7	7.3	18.7	29.0	6.8	87.1
	10.25	19.9	31.0	6.3	82.8	10.7	19.6	29.9	6.5	84.3	9.8	19.6	29.8	6.3	82.2					
Nov. 25	0	16.9	30.6	7.9	97.6	0	16.4	27.2	11.8	141.7	0	16.1	28.5	8.6	103.5	0	15.0	26.8	7.6	88.7
	2	16.9	30.6	7.9	97.6	2	16.9	29.7	7.3	90.0	2	16.4	28.9	8.3	101.1	2	15.5	27.9	6.9	82.3
	4	16.9	30.6	7.9	97.8	4	16.9	29.7	7.2	89.3	4	16.5	29.2	8.2	100.3	4	16.4	28.9	6.7	82.2
	6	16.9	30.6	7.8	96.4	6	17.1	29.9	6.8	84.9	6	16.5	29.3	8.0	98.1	6	16.7	29.4	6.6	80.8
	8	16.9	30.6	7.5	93.7	8	17.2	30.0	6.7	83.5	8	16.6	29.4	7.4	91.3	7.9	17.2	29.8	6.8	84.8
	10	16.9	30.6	7.5	93.6	10	17.2	30.1	6.6	82.4	10	17.4	30.2	6.0	75.5					
	11.33	16.9	30.6	7.5	93.6	12.1	17.3	30.1	5.3	66.5	11.0	17.4	30.2	5.9	73.6					
Dec. 17	0	12.9	30.4	8.8	100.6	0	12.7	28.8	8.5	95.7	0	13.0	28.7	8.1	92.5	0	13.0	28.8	7.8	88.5
	2	12.9	30.4	8.8	100.5	2	12.7	28.8	8.5	95.5	2	13.0	28.7	8.1	92.4	2	13.0	28.8	8.0	90.6
	4	12.9	30.4	8.8	100.5	4	12.7	28.8	8.5	95.7	4	13.1	28.8	8.0	91.4	4	13.1	28.8	8.0	90.5
	6	12.9	30.4	8.6	98.7	6	12.8	28.9	8.4	95.2	6	13.1	28.9	8.0	91.1	6	13.1	28.8	8.0	90.6
	8	12.9	30.4	8.4	96.6	8	12.9	29.4	8.4	95.9	8	13.3	29.2	7.7	87.9	8.9	13.0	29.0	7.7	87.2
	10	13.0	30.5	8.2	94.0	10	13.3	29.6	7.7	88.7	11.8	13.4	30.7	6.8	79.0					
	12	13.5	31.2	6.8	78.7	11.8	13.5	30.7	6.7	77.3										
Jan. 14	0	8.9	30.9	10.3	108.9	0	8.4	28.6	11.5	117.8	0	8.6	28.2	12.2	124.9	0	7.9	27.4	12.6	127.0
	2	8.9	30.9	10.3	108.9	2	8.4	28.7	11.5	117.8	2	8.6	28.2	12.1	124.1	2	7.0	27.2	12.9	127.2
	4	8.9	30.9	10.3	108.7	4	8.4	28.7	11.5	117.6	4	8.8	28.8	11.0	114.3	4	8.0	27.5	12.3	123.8
	6	8.9	30.9	10.3	108.1	6	8.5	29.2	11.0	113.0	6	9.1	29.7	9.3	98.0	6	8.7	28.5	10.1	104.5
	8	9.0	31.0	10.2	107.3	8	8.5	30.0	10.5	108.6	8	9.4	30.1	8.5	90.4	8	9.4	29.7	8.5	89.5
	10	9.1	31.1	10.0	105.9	10	8.5	30.2	10.3	107.3	10	9.2	30.3	9.4	98.7	11.3	9.3	30.4	8.5	90.2
	12.29	9.1	31.1	9.9	105.2	13.0	8.8	30.3	10.0	104.8	12.0	9.2	30.4	9.4	98.9					
Feb. 23	0	8.4	30.1	9.0	93.2	0	8.4	25.9	9.4	94.5	0	8.4	26.7	9.0	91.5	0	7.7	23.4	10.3	100.8
	2	8.4	30.1	9.0	93.6	2	8.4	27.4	8.9	90.3	2	8.4	26.8	8.8	89.6	2	7.6	27.1	8.9	88.4
	4	8.4	30.1	9.1	94.1	4	8.3	29.2	8.8	90.8	4	8.3	29.2	8.5	87.7	4	7.9	29.2	8.3	84.1
	6	8.4	30.1	9.1	94.3	6	8.3	29.8	8.9	91.6	6	8.3	29.6	8.6	88.6	6	8.0	29.6	8.1	82.6
	8	8.4	30.3	8.9	92.3	8	8.3	30.1	8.8	91.0	8	8.3	29.2	8.7	88.9	8.8	7.9	30.0	7.1	72.8
	11.55	8.3	30.4	8.8	90.9	11.7	8.3	30.2	8.2	85.0	11.4	8.3	30.2	7.8	80.4					
Mar.23	0	11.1	27.5	10.2	110.0	0	11.7	22.5	9.4	100.1	0	11.5	25.0	9.7	104.4	0	11.4	21.7	8.7	91.1
	2	11.1	28.3	10.0	109.0	2	11.2	26.0	9.4	101.0	2	11.3	25.3	9.8	105.4	2	11.3	22.6	8.4	88.3
	4	11.1	30.1	9.9	109.3	4	10.7	29.4	8.9	97.0	4	11.3	27.3	9.5	102.6	4	11.3	26.3	8.4	90.1
	6	10.9	30.5	9.6	105.2	6	10.6	29.8	9.1	98.3	6	10.7	29.3	9.0	97.5	6	10.6	29.7	8.6	93.4
	8	10.8	30.6	9.5	103.9	8	10.5	30.2	8.8	95.6	8	10.5	29.9	8.7	93.8	8.4	10.3	29.8	7.6	82.2
	11.46	10.6	30.6	8.1	88.0	12.2	10.3	30.5	8.1	87.6	10.8	10.2	30.4	7.8	83.8					

N.D. : No data

Table S2. Original data used to design the vertical profiles of pH and redox potential (Eh) in the sediments.

Station		1		2		3		4	
Date	Depth (cm)	pH	Eh (mV)	pH	Eh (mV)	pH	Eh (mV)	pH	Eh (mV)
Apr. 23	0	7.36	55	N.D.	N.D.	7.02	-146	6.08	9
	1	7.20	25	N.D.	N.D.	6.99	-156	6.52	-37
	2	7.26	16	N.D.	N.D.	6.98	-163	6.81	-25
	3	7.40	-11	N.D.	N.D.	7.04	-174	6.98	33
	4	7.45	19	N.D.	N.D.	6.95	-187	6.93	8
	5	7.42	-5	N.D.	N.D.	6.93	-187	6.96	44
	9	7.17	-37	N.D.	N.D.	6.97	-186	7.06	-44
	15	7.22	-154	N.D.	N.D.	7.08	-193	7.33	-3
May. 27	0	6.70	64	N.D.	N.D.	6.49	95	6.57	-4
	1	7.05	-25	N.D.	N.D.	6.54	-14	6.62	-52
	2	7.03	-34	N.D.	N.D.	6.69	-24	6.66	-92
	3	7.15	-89	N.D.	N.D.	6.87	-49	6.79	-13
	4	7.33	-85	N.D.	N.D.	6.92	-29	6.86	17
	5	7.25	-106	N.D.	N.D.	7.03	-79	6.89	1
	9	7.27	-123	N.D.	N.D.	7.22	-130	7.21	-101
	15	7.29	-144	N.D.	N.D.	7.35	-149	7.60	-161
Jun. 29	0	7.31	65	7.08	-109	7.30	-107	7.14	-130
	1	7.36	32	7.08	-126	7.03	-97	7.07	-128
	2	7.33	-12	7.00	-145	7.10	-80	7.04	-104
	3	7.24	-110	7.09	-159	7.06	-101	7.04	-96
	4	7.15	-109	7.05	-170	7.14	-136	7.04	-40
	5	7.24	-140	7.05	-175	7.15	-134	7.05	23
	9	7.17	-154	7.02	-178	7.22	-144	7.57	-159
	15	7.18	-161	7.11	-188	7.30	-157	7.41	-85
Jul. 30	0	7.46	-71	7.41	-162	7.32	-121	7.14	-126
	1	7.46	-128	6.98	-170	7.31	-130	7.14	-155
	2	7.44	-138	6.89	-183	7.27	-144	7.17	-155
	3	7.46	-160	6.90	-182	7.28	-97	7.30	-158
	4	7.21	-165	6.89	-189	7.17	-141	7.20	-152
	5	7.29	-144	6.93	-189	7.23	-93	7.06	-161
	9	7.15	-180	6.91	-196	7.25	-140	7.14	-112
	15	7.09	-181	6.97	-208	7.34	-117	7.20	-186
Aug. 10	0	7.41	-108	7.95	-24	7.05	-131	7.18	-108
	1	7.08	-136	7.59	-148	7.01	-156	7.16	-118
	2	7.06	-164	7.10	-158	6.98	-173	7.06	-62
	3	7.10	-164	7.02	-163	6.96	-179	7.07	-104
	4	7.03	-168	6.97	-139	6.97	-156	6.95	-34
	5	7.02	-170	6.95	-165	6.95	-175	6.99	6
	9	7.00	-173	7.06	-194	6.96	-184	7.28	-5
	15	7.02	-173	7.23	-221	7.07	-188	7.46	-147
Sep. 16	0	7.10	-82	7.36	-156	7.36	-83	7.18	31
	1	7.12	-141	7.17	-147	7.17	-130	7.20	-34
	2	7.11	-123	7.17	-176	7.17	-173	7.43	-108
	3	7.12	-146	7.05	-191	7.05	-173	7.18	-112
	4	7.20	-153	7.04	-195	7.04	-177	7.28	-127
	5	7.19	-140	7.03	-195	7.03	-158	7.17	-153
	9	7.16	-172	7.02	-201	7.02	-189	7.23	-150
	15	7.16	-153	7.05	-233	7.05	-205	7.38	-190
Oct. 26	0	7.31	136	7.39	65	6.88	53	7.76	209
	1	7.54	56	7.17	-128	6.79	-61	7.54	16
	2	7.73	23	7.13	-132	6.97	-129	6.97	37
	3	7.85	15	7.10	-165	7.12	-134	6.92	53
	4	7.76	-28	7.10	-172	7.18	-148	7.07	-28
	5	7.61	-64	7.17	-173	7.20	-151	7.18	-119
	9	7.17	-103	7.20	-187	7.23	-188	7.23	-148
	15	7.21	-128	7.12	-186	7.27	-189	7.25	-216
Nov. 25	0	7.56	104	7.28	16	7.64	-113	7.22	81
	1	7.60	110	6.22	5	7.07	-101	7.03	55
	2	7.62	102	6.45	-65	6.27	52	7.02	24
	3	7.63	29	6.84	-126	6.50	-40	7.16	-48
	4	7.62	40	6.89	-137	6.81	-68	7.21	-82
	5	7.61	36	6.99	-148	6.90	-112	7.20	-103
	9	7.40	-49	7.09	-172	7.35	-153	7.28	-114
	15	7.34	-72	7.10	-189	7.38	-166	7.39	-160
Dec. 17	0	7.65	214	6.73	92	6.60	126	7.24	78
	1	7.64	73	6.93	64	6.02	36	7.29	48
	2	7.63	-30	6.98	74	6.51	-8	6.98	63
	3	7.39	-76	7.41	-96	6.73	-27	6.98	55
	4	7.31	-95	7.43	-121	7.04	-108	6.99	-22
	5	7.28	-118	7.43	-143	7.13	-124	7.10	-99
	9	7.20	-141	7.32	-175	7.31	-159	7.32	-147
	15	7.18	-134	7.34	-188	7.34	-178	7.40	-168
Jan. 14	0	7.42	212	6.72	119	6.89	100	7.17	19
	1	7.58	57	6.45	29	6.41	104	7.13	14
	2	7.60	35	6.51	-46	6.46	1	7.02	43
	3	7.50	13	6.56	-82	6.67	-59	6.85	57
	4	7.52	-13	6.73	-99	6.89	-85	6.87	-22
	5	7.37	-41	6.82	-121	6.93	-111	6.95	-18
	9	7.23	-77	6.99	-142	7.13	-175	7.09	-93
	15	7.19	-126	7.11	-114	7.28	-169	7.25	-147
Feb. 23	0	7.63	135	6.67	199	7.47	65	7.28	-28
	1	7.80	67	6.47	118	7.45	36	7.38	23
	2	7.81	81	6.85	35	7.40	50	7.35	-3
	3	7.69	36	6.86	-90	7.33	-5	7.38	37
	4	7.68	12	7.18	-129	7.37	-70	7.35	10
	5	7.67	-3	7.27	-149	7.43	-116	7.32	-17
	9	7.56	-52	7.45	-164	7.51	-125	7.61	-114
	15	7.47	-99	7.52	-177	7.57	-146	7.62	-144
Mar.23	0	7.13	219	6.31	143	6.55	77	6.73	77
	1	6.99	172	6.02	36	6.18	96	6.68	-77
	2	7.13	15	6.10	-11	6.15	57	7.15	-6
	3	7.24	-11	6.38	-47	6.44	-4	7.17	-75
	4	7.24	-56	6.66	-84	6.50	-84	7.20	-45
	5	7.35	-67	6.70	-93	6.92	-95	7.22	-165
	9	7.24	-107	7.02	-149	7.23	-164	7.40	-132
	15	7.19	-128	7.20	-168	7.38	-185	7.46	-174
									N.D. : No data

Table S3. Original data used to design the vertical profiles of dissolved sulfide speciation in the sediments.

Station		1		2		3		4	
Date	Depth	H_2S	HS^-	H_2S	HS^-	H_2S	HS^-	H_2S	HS^-
	(cm)				($mmol \cdot L^{-1}$)				
Apr. 23	0	0.0	0.0	N.D.	N.D.	0.0	0.0	0.0	0.0
	1	0.0	0.0	N.D.	N.D.	0.6	1.3	0.0	0.0
	2	0.0	0.0	N.D.	N.D.	1.0	2.2	0.0	0.0
	3	0.0	0.0	N.D.	N.D.	1.0	2.5	0.0	0.0
	4	0.0	0.2	N.D.	N.D.	1.4	2.9	0.0	0.0
	5	0.0	0.1	N.D.	N.D.	1.2	2.4	0.0	0.0
	9	0.1	0.3	N.D.	N.D.	0.7	1.6	0.0	0.0
	15	0.2	0.9	N.D.	N.D.	0.5	1.6	0.0	0.0
May. 27	0	0.0	0.0	N.D.	N.D.	0.0	0.0	0.0	0.0
	1	0.0	0.0	N.D.	N.D.	0.0	0.0	0.1	0.1
	2	0.0	0.0	N.D.	N.D.	0.0	0.0	0.0	0.0
	3	0.0	0.0	N.D.	N.D.	0.0	0.0	0.0	0.0
	4	0.0	0.2	N.D.	N.D.	0.0	0.0	0.0	0.0
	5	0.1	0.3	N.D.	N.D.	0.0	0.0	0.0	0.0
	9	0.1	0.7	N.D.	N.D.	0.0	0.0	0.0	0.2
	15	0.3	1.5	N.D.	N.D.	0.0	0.2	0.0	0.0
Jun. 29	0	0.0	0.0	0.7	2.4	0.1	0.4	0.0	0.0
	1	0.0	0.0	0.2	0.6	0.3	1.0	0.0	0.0
	2	0.0	0.0	1.2	3.2	0.1	0.3	0.1	0.2
	3	0.1	0.3	1.3	4.4	0.1	0.2	0.2	0.7
	4	0.2	0.8	1.9	5.9	0.1	0.4	0.2	0.6
	5	0.1	0.7	1.8	5.4	0.1	0.5	0.0	0.0
	9	0.4	1.6	1.8	5.6	0.6	2.6	0.0	0.0
	15	0.5	2.0	1.5	5.4	0.5	2.5	0.1	0.6
Jul. 30	0	0.0	0.3	0.1	0.5	0.0	0.0	0.0	0.1
	1	0.1	1.0	0.9	2.7	0.0	0.2	0.2	1.1
	2	0.2	1.6	1.4	3.7	0.0	0.3	0.2	1.1
	3	0.2	1.8	1.5	4.0	0.0	0.2	0.2	1.1
	4	0.4	1.9	1.6	4.3	0.0	0.0	0.1	0.7
	5	0.3	2.2	1.7	4.9	0.0	0.0	0.0	0.2
	9	0.3	1.4	1.9	5.3	0.0	0.1	0.3	1.3
	15	0.2	0.9	1.9	6.3	0.0	0.0	0.4	2.3
Aug. 10	0	0.0	0.0	0.0	0.0	0.3	1.1	0.1	0.5
	1	0.1	0.5	0.1	1.2	0.8	2.6	0.2	0.8
	2	0.3	1.3	0.6	2.4	0.8	2.5	0.3	1.0
	3	0.5	1.8	0.9	3.1	1.3	3.7	0.2	0.7
	4	0.5	1.7	1.2	3.9	1.1	3.6	0.2	0.5
	5	0.7	2.3	1.2	3.7	1.0	3.2	0.1	0.3
	9	0.7	2.2	0.9	3.4	0.8	2.3	0.0	0.2
	15	0.6	2.0	0.4	2.1	0.5	2.1	0.1	0.6
Sep. 16	0	0.0	0.0	0.3	1.7	0.0	0.0	0.0	0.1
	1	0.1	0.5	1.0	4.1	0.3	1.1	0.0	0.0
	2	0.3	1.1	1.1	4.7	0.7	2.8	0.1	0.6
	3	0.4	1.6	1.7	5.4	1.1	3.6	0.2	0.9
	4	0.5	2.3	1.9	6.1	1.2	3.8	0.2	1.0
	5	0.5	2.5	1.8	5.4	1.4	4.4	0.3	1.4
	9	0.4	1.5	2.3	6.8	1.8	5.4	0.0	0.0
	15	0.3	1.1	1.8	5.8	1.3	4.2	0.0	0.3
Oct. 26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.7	2.3	0.1	0.1	0.0	0.0
	3	0.0	0.0	1.0	3.3	0.2	0.8	0.0	0.0
	4	0.0	0.0	1.1	3.5	0.4	1.4	0.0	0.0
	5	0.0	0.1	1.0	3.8	0.5	2.0	0.0	0.0
	9	0.2	0.8	1.5	6.4	0.6	2.7	0.0	0.0
	15	0.2	1.0	1.4	4.8	0.6	3.0	0.0	0.0
Nov. 25	0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	4	0.0	0.0	0.6	1.1	0.4	0.7	0.0	0.0
	5	0.0	0.0	1.1	2.4	0.7	1.4	0.0	0.1
	9	0.0	0.0	1.5	4.3	0.4	2.3	0.0	0.2
	15	0.0	0.0	1.5	4.5	0.5	2.8	0.0	0.0
Dec. 17	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0
	3	0.1	0.5	0.1	0.3	0.6	0.7	0.0	0.0
	4	0.2	0.8	0.2	1.1	0.6	1.4	0.0	0.0
	5	0.3	1.2	0.4	2.0	0.6	1.7	0.0	0.1
	9	0.4	1.3	0.8	3.3	0.8	3.2	0.2	0.9
	15	0.6	2.0	1.0	4.5	0.8	3.6	0.3	1.6
Jan. 14	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
	9	0.1	0.2	0.7	1.3	0.4	0.9	0.0	0.0
	15	0.2	0.6	1.2	2.9	0.6	2.2	0.0	0.0
Feb. 23	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	3	0.0	0.0	0.5	0.7	0.0	0.0	0.0	0.0
	4	0.0	0.0	0.6	1.6	0.0	0.0	0.0	0.0
	5	0.0	0.0	0.6	1.9	0.0	0.0	0.0	0.0
	9	0.0	0.2	0.6	3.0	0.1	0.5	0.0	0.0
	15	0.1	0.4	0.6	3.5	0.2	1.3	0.0	0.0
Mar.23	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0
	3	0.1	0.3	0.3	0.2	0.0	0.0	0.0	0.0
	4	0.1	0.5	0.5	0.4	0.2	0.1	0.0	0.0
	5	0.1	0.6	0.7	0.7	0.3	0.5	0.0	0.0
	9	0.3	1.0	0.9	1.9	0.4	1.5	0.0	0.0
	15	0.4	1.1	1.0	3.2	0.6	2.6	0.0	0.2

N.D. : No data

Table S4. Original data used to design the vertical profiles of iron sulfide content in the sediments.

Station		1	2	3	4
Date	Depth (cm)	Iron sulfede (mmol·g^{-1} dry weight)			
Apr. 23	0	0.010	N.D.	0.046	0.022
	1	0.034	N.D.	0.061	0.086
	2	0.067	N.D.	0.079	0.083
	3	0.070	N.D.	0.053	0.050
	4	0.036	N.D.	0.045	0.009
	5	0.055	N.D.	0.050	0.011
	9	0.035	N.D.	0.058	0.121
	15	0.003	N.D.	0.057	0.077
May. 27	0	0.023	N.D.	0.024	0.015
	1	0.023	N.D.	0.029	0.073
	2	0.064	N.D.	0.037	0.119
	3	0.033	N.D.	0.028	0.094
	4	0.044	N.D.	0.021	0.012
	5	0.037	N.D.	0.025	0.023
	9	0.034	N.D.	0.006	0.101
	15	0.023	N.D.	0.007	0.090
Jun. 29	0	0.015	0.048	0.043	0.039
	1	0.014	0.045	0.048	0.038
	2	0.025	0.054	0.072	0.058
	3	0.053	0.074	0.040	0.106
	4	0.046	0.082	0.061	0.095
	5	0.039	0.064	0.050	0.099
	9	0.039	0.082	0.037	0.040
	15	0.021	0.069	0.024	0.055
Jul. 30	0	0.040	0.068	0.036	0.114
	1	0.029	0.048	0.031	0.100
	2	0.033	0.057	0.037	0.081
	3	0.035	0.077	0.021	0.167
	4	0.022	0.076	0.015	0.128
	5	0.027	0.049	0.009	0.088
	9	0.031	0.045	0.016	0.165
	15	0.019	0.049	0.010	0.137
Aug. 10	0	0.033	0.039	0.069	0.103
	1	0.030	0.041	0.058	0.108
	2	0.035	0.037	0.062	0.097
	3	0.034	0.033	0.057	0.110
	4	0.040	0.040	0.054	0.097
	5	0.030	0.053	0.030	0.096
	9	0.030	0.031	0.056	0.069
	15	0.025	0.031	0.011	0.070
Sep. 16	0	0.035	0.058	0.097	0.008
	1	0.040	0.048	0.113	0.046
	2	0.068	0.057	0.097	0.118
	3	0.055	0.071	0.077	0.124
	4	0.039	0.063	0.080	0.107
	5	0.031	0.078	0.088	0.104
	9	0.029	0.092	0.081	0.069
	15	0.017	0.152	0.061	0.093
Oct. 26	0	0.013	0.025	0.018	0.000
	1	0.010	0.091	0.063	0.001
	2	0.040	0.097	0.060	0.017
	3	0.082	0.055	0.068	0.051
	4	0.047	0.071	0.064	0.123
	5	0.039	0.078	0.063	0.138
	9	0.037	0.011	0.038	0.099
	15	0.018	0.053	0.130	0.123
Nov. 25	0	0.016	0.068	0.005	0.001
	1	0.019	0.050	0.026	0.001
	2	0.017	0.019	0.058	0.006
	3	0.027	0.034	0.045	0.021
	4	0.025	0.064	0.035	0.058
	5	0.031	0.092	0.068	0.112
	9	0.014	0.088	0.073	0.140
	15	0.009	0.084	0.055	0.071
Dec. 17	0	0.029	0.028	0.066	0.007
	1	0.042	0.059	0.062	0.006
	2	0.041	0.058	0.062	0.008
	3	0.044	0.042	0.093	0.007
	4	0.040	0.050	0.046	0.112
	5	0.034	0.065	0.067	0.111
	9	0.026	0.055	0.035	0.086
	15	0.023	0.024	0.031	0.152
Jan. 14	0	0.032	0.084	0.008	0.059
	1	0.041	0.038	0.027	0.006
	2	0.020	0.013	0.080	0.006
	3	0.033	0.013	0.083	0.022
	4	0.043	0.073	0.081	0.048
	5	0.051	0.067	0.086	0.112
	9	0.035	0.090	0.084	0.109
	15	0.013	0.123	0.069	0.211
Feb. 23	0	0.029	0.087	0.011	0.027
	1	0.036	0.033	0.022	0.005
	2	0.023	0.014	0.049	0.006
	3	0.037	0.008	0.065	0.024
	4	0.042	0.054	0.070	0.039
	5	0.053	0.048	0.078	0.066
	9	0.038	0.053	0.053	0.053
	15	0.018	0.104	0.053	0.167
Mar.23	0	0.014	0.011	0.009	0.017
	1	0.052	0.042	0.005	0.037
	2	0.040	0.082	0.028	0.013
	3	0.047	0.064	0.034	0.010
	4	0.039	0.042	0.046	0.032
	5	0.045	0.080	0.049	0.118
	9	0.037	0.090	0.046	0.084
	15	0.014	0.069	0.043	0.136
					N.D. : No data

Table S5. Original data used to design the vertical profiles of ionized iron speciation in the sediments.

Station		1		2		3		4	
Date	Depth (cm)	Fe^{2+}	Fe^{3+}	Fe^{2+}	Fe^{3+}	Fe^{2+}	Fe^{3+}	Fe^{2+}	Fe^{3+}
		($mmol \cdot L^{-1}$)							
Apr. 23	0	0.06	0.01	N.D.	N.D.	0.07	0.00	0.11	0.00
	1	0.17	0.00	N.D.	N.D.	0.00	0.00	0.02	0.00
	2	0.08	0.00	N.D.	N.D.	0.00	0.00	0.01	0.00
	3	0.00	0.01	N.D.	N.D.	0.01	0.00	0.04	0.01
	4	0.00	0.00	N.D.	N.D.	0.01	0.00	0.09	0.01
	5	0.00	0.00	N.D.	N.D.	0.01	0.00	0.08	0.00
	9	0.00	0.00	N.D.	N.D.	0.00	0.00	0.08	0.02
	15	0.00	0.00	N.D.	N.D.	0.01	0.01	0.00	0.00
May. 27	0	0.08	0.00	N.D.	N.D.	0.20	0.00	0.09	0.00
	1	0.04	0.00	N.D.	N.D.	0.11	0.03	0.00	0.00
	2	0.00	0.00	N.D.	N.D.	0.04	0.00	0.04	0.00
	3	0.00	0.00	N.D.	N.D.	0.00	0.00	0.10	0.04
	4	0.00	0.00	N.D.	N.D.	0.00	0.00	0.11	0.02
	5	0.00	0.00	N.D.	N.D.	0.00	0.00	0.06	0.02
	9	0.00	0.00	N.D.	N.D.	0.00	0.00	0.00	0.00
	15	0.00	0.00	N.D.	N.D.	0.00	0.00	0.00	0.00
Jun. 29	0	0.07	0.00	0.00	0.00	0.00	0.00	0.04	0.00
	1	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul. 30	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
Aug. 10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep. 16	0	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00
	1	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oct. 26	0	0.05	0.01	0.03	0.00	0.10	0.00	0.05	0.01
	1	0.10	0.01	0.00	0.00	0.01	0.00	0.29	0.03
	2	0.02	0.01	0.00	0.00	0.00	0.00	0.32	0.02
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.03
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov. 25	0	0.02	0.00	0.21	0.00	0.10	0.00	0.25	0.02
	1	0.05	0.00	0.00	0.00	0.10	0.00	0.34	0.01
	2	0.01	0.00	0.00	0.00	0.01	0.00	0.32	0.01
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.03
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.01
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec. 17	0	0.01	0.01	0.29	0.01	0.19	0.01	0.32	0.02
	1	0.00	0.00	0.33	0.02	0.23	0.00	0.33	0.02
	2	0.00	0.00	0.25	0.01	0.02	0.00	0.34	0.02
	3	0.00	0.00	0.03	0.00	0.00	0.00	0.27	0.03
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.01
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan. 14	0	0.06	0.00	0.27	0.02	0.29	0.01	0.28	0.01
	1	0.08	0.01	0.05	0.00	0.20	0.00	0.30	0.02
	2	0.03	0.00	0.00	0.00	0.01	0.00	0.27	0.01
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.01
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb. 23	0	0.02	0.01	0.25	0.01	0.21	0.01	0.02	0.00
	1	0.08	0.00	0.16	0.00	0.30	0.02	0.21	0.03
	2	0.01	0.01	0.01	0.00	0.24	0.01	0.25	0.03
	3	0.00	0.00	0.00	0.00	0.08	0.00	0.21	0.02
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.02
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.02
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar.23	0	0.04	0.01	0.29	0.02	0.29	0.02	0.26	0.01
	1	0.05	0.00	0.21	0.00	0.28	0.02	0.26	0.02
	2	0.00	0.00	0.03	0.00	0.24	0.01	0.25	0.02
	3	0.00	0.00	0.00	0.00	0.02	0.00	0.21	0.02
	4	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.01
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01
	9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

N.D. : No data