Table 1. Comparison of the sulfate reduction rate (SRR) in whole core and bag incubation

Station	Water depth m	temp. °C	Sulfate conc. mM	SRR in whole core nmol·cm^{-3}·d^{-1}	SRR in bag incubation*
Weddewarden	0	18			
0-2 cm			12	41±28	787 (19)
Århus Bay	16	13			
0-2 cm			18	36±21	159 (4.4)
2-5 cm			20	55±23	125 (2.3)
5-8 cm			20	28±11	218 (7.8)
Kattegat (K3)	55	7			
0-5 cm			28	31±9	544 (18)
5-10 cm			26	43±7	77 (1.8)
10-15 cm			25	35±6	21 (0.6)
15-20 cm			25	32±5	31 (1.0)
Kattegat (K6)	93	7			
0-5 cm			25	21±10	397 (19)
5-10 cm			26	25±3	139 (5.6)
Black Sea					
St1, St2, St3					
0-5 cm	62	8	14	19±9	58 (3.1)
0-5 cm	93	8	16	12±7	40 (3.3)
0-5 cm	100	8	17	12±2	24 (2.0)
Solar Lake	0.5	20			
0-0.2 cm			65	2210±1260	8270 (3.7)
0.2-0.4 cm			65	3120±1000	6300 (2.0)
0.4-0.7 cm			65	2780±480	3070 (1.1)
0.7-1 cm			65	1120±260	1200 (1.1)
1-1.3 cm			69	550±160	230 (0.4)
Løgten Lagoon	0	15			
0-1 cm			13	7036±1722	17640 (2.5)

* Numbers in parentheses give the ratio of SRR in bag and whole-core incubations.

Table 2. Data for Figures 1 and 2

	$\delta^{34}S_{sulfate}$	$\delta^{34}S_{pyrite}$ ‰	ε_{SR}	D^*
Århus Bay				
0-2 cm	18.0	-29.0	31±2.6	15.5
2-5 cm	19.7	-31.9	21.5±3.1	30.1
5-8 cm	20.4	-35.3	27.0±4.7	28.7
Kattegat (K3)				
0-5 cm	18.3	-23.7	24.5±4.8	17.5
5-10 cm	19.1	-24.2	27.0±2.4	16.3
10-15 cm	20.0	-23.9	27.5±2.1	16.4
15-20 cm	19.7	-25.4	24.0±3.6	21.1
Kattegat (K6)				
0-5 cm	19.0	-24.1	22.7±1.2	20.4
5-10 cm	19.5	-24.0	25.5	18.0
Black Sea				
St 1, St 2, St 3				
0-5 cm	20.0	-27.6	30.2	17.4
0-5 cm	19.6	-27.4	27.4	19.6
0-5 cm	19.9	-21.5	19.4	22.0
Weddewarden				
0-2 cm	18.4	-12.3	21.0	9.7
Solar Lake				
0-0.2 cm	20.9	-16.4	31.7±3	5.6
0.2-0.4 cm	20.9	-16.4	26.2±3	11.1
0.4-0.7 cm	20.9	-16.4	23.4±3	13.9
0.7-1 cm	20.9	-16.4	27.4±3	9.9
1-1.3 cm	20.9	-15.6	29.6±3	6.9
Løgten Lagoon				
0-1 cm	25.4	-6.8	24.3±0.5	7.9

**D* is the amount of ^{34}S depletion in pyrite not explained by sulfate reduction ($D = \delta^{34}S_{sulfate} - \delta^{34}S_{pyrite} - \varepsilon_{SR}$).

Table 3. Data for Figure 2

Station	Sred buried	SRR	Sedimentation rate*	integation depths	sulfide oxidation
	$\mu mol \cdot cm^{-3}$	$\mu mol \cdot cm^{-2} \cdot d^{-1}$	$cm \cdot d^{-1}$	cm	%
Weddewarden	85.0	0.86	7.4x10-4	0-10.5	93
Århus Bay	128.5	0.33	8.49x10-4	0-10.5	88
K3	44.1 (83.4)	0.30 (0.84)	8.22x10-4	0-10 (0-25)	87.9 (91.7)
K6	49.7	0.23	8.22x10-4	0-10	82
Black Sea St 1	33.0 (48.2)	0.095	1.43x10-4	0-10	97.3
Black Sea St 2	86.0 (107.3)	0.061	1.10x10-4	0-10	99.6
Black Sea St 3	120.4 (145.1)	0.058	1.10x10-4	0-10	98.9
Solar Lake	43.71	2.543	3.33x10-4	0-1.5	99
Løgten Lagoon	30.86	24.24	3.33x10-4	0-10	99

* Literature values from: Valeur et al., 1992 (Århus Bay), van Weering et al., 1987 (Kattegat), Jørgensen, 1977 (Weddewarden), Jørgensen and Cohen, 1977 (Solar Lake and Løgten Lagoon).

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Table 4. Data for Figure 3

Århus Bay			K3			K6			Weddewarden			Black Sea		
SRR*	ε_{SR} †	$\delta^{34}SO_4$ - $\delta^{34}FeS_2$	SRR*	ε_{SR} †	$\delta^{34}SO_4$ - $\delta^{34}FeS_2$	SRR*	ε_{SR} †	$\delta^{34}SO_4$ - $\delta^{34}FeS_2$	SRR*	ε_{SR} †	$\delta^{34}SO_4$ - $\delta^{34}FeS_2$	SRR*	ε_{SR} †	$\delta^{34}SO_4$ - $\delta^{34}FeS_2$
159	31.5	47	544	24.5	42	397	22.7	43.1	787	21.0	30.7	58	30.2	47.6
125	21.5	51.6	77	27.0	43.3	139	25.5	43.5				40	27.3	47
218	27.0	55.7	21	27.5	43.9							24	19.4	41.4
			31	24.0	45.1									

*Sulfate-reduction rate (in $nmol \cdot cm^{-3} \cdot d^{-1}$).

†ε_{SR} = fractionation during sulfate reduction (in ‰)

Table 4. Data for Figure 3 (continued)

Solar Lake			Løgten Lagoon		
SRR*	ε_{SR} †	$\delta^{34}SO_4 - \delta^{34}FeS_2$	SRR*	ε_{SR} †	$\delta^{34}SO_4 - \delta^{34}FeS_2$
5660	29	37.3	14190	24.3	32.2
806	28.6	37.3	18920	23.8	32.2
232	28.9	36.5	18690	24.6	32.2
6690	24.3	37.3			
6550	29.7	37.3			
3710	27.8	37.3			
9240	24.9	37.3			
2740	28.7	37.3			
820	30.3	37.3			
8940	23.9	37.3			
7600	30.6	37.3			
3610	29.6	37.3			
1480	29.8	37.3			