

Supplementary Table I: Fatty acid composition (%) in all mesocosms at each sampling day. Only fatty acids accounting >1% in at least one sample are shown. Missing values are samples lost during analyses.

Mesocosm nr.	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3	3
CO ₂ conc.	658	658	658	658	658	658	658	658	658	256	256	256	256	256	256	256	256	256	256	180	180	180
exp. Day	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25	25	4	8	11
12:0	0.5	0.2	0.5	0.6	0.2	0.7	0.5	0.3	0.5	0.4	0.2	0.7	0.6	0.2	0.6		0.2	0.3	0.5	0.4	0.5	
14:0	5.9	7.8	7.0	7.6	6.2	7.0	6.8	7.1	7.8	6.0	6.7	8.1	7.6	6.3	8.0		8.4	10.3	5.8	8.4	8.1	
i-15:0	0.9	1.7	1.2	1.6	1.4	1.6	1.7	1.8	1.4	1.1	1.5	1.5	1.7	1.6	1.8		1.5	1.4	1.0	1.4	1.3	
a-15:0	0.8	1.5	1.0	1.6	1.0	1.3	1.0	1.0	0.8	1.0	1.3	1.2	1.3	1.1	1.2		1.0	0.8	3.8	1.2	1.0	
15:0	0.6	0.9	0.6	0.8	0.8	0.9	0.8	1.0	0.9	0.7	0.7	0.7	0.9	0.9	0.9		0.8	0.7	0.8	0.7	0.7	
16:0	15.9	17.8	16.4	16.1	16.4	16.6	16.7	17.5	16.5	16.0	17.5	16.7	16.3	16.2	16.9		16.7	14.8	15.4	17.2	17.1	
16:1n7	9.1	4.8	4.4	4.1	4.5	5.0	5.3	7.9	7.6	6.3	5.3	3.9	4.4	4.5	4.8		10.7	10.6	8.0	5.1	4.0	
16:1n5	1.0	1.1	0.8	1.0	1.0	0.9	0.9	1.1	1.1	1.1	1.1	1.0	1.3	1.3	1.2		1.3	1.1	0.9	0.9	0.8	
16:3n4	0.6	0.5	0.3	0.2	0.3	0.3	0.2	0.5	0.6	0.4	0.4	0.0	0.0	0.3	0.0		0.5	1.0	0.5	0.4	0.3	
16:4n1	1.1	0.6	0.3	0.0	0.1	0.3	0.3	0.9	0.9	0.8	0.5	0.3	0.0	0.2	0.3		1.6	1.7	0.7	0.4	0.3	
18:0	6.3	5.5	5.3	3.6	3.9	3.1	3.8	3.7	2.8	9.1	5.9	5.3	3.9	3.7	3.4		2.8	2.0	9.4	5.4	4.4	
18:1n9	4.3	6.1	6.7	6.6	6.6	5.1	4.8	4.6	3.7	3.1	5.7	4.8	4.7	5.1	4.3		3.7	2.8	3.3	5.5	4.9	
18:1n7	4.3	3.1	2.8	2.9	3.0	2.8	2.9	3.0	2.5	3.3	3.2	3.0	3.4	3.6	3.1		3.4	2.9	3.0	2.8	2.7	
18:2n6 c	1.9	4.5	3.0	3.2	3.1	2.4	2.9	3.1	2.5	1.9	4.1	2.8	2.6	2.6	2.2		2.7	2.0	1.9	3.7	2.6	
18:3n3	2.1	3.6	3.3	2.9	2.9	2.3	2.6	2.0	1.3	2.5	3.5	2.7	2.6	2.8	2.3		1.7	1.1	2.2	5.5	3.5	
18:4n3	6.7	10.0	9.5	7.4	7.1	6.3	6.2	5.5	5.0	8.3	10.0	8.1	7.4	7.6	6.8		5.6	5.0	7.6	11.5	10.6	
18:5n3	3.7	6.0	6.2	8.6	9.1	8.7	7.8	6.4	7.1	4.5	5.7	6.9	8.9	9.6	9.3		5.5	4.9	3.9	5.5	6.1	
20:4n3	0.1	0.8	0.1	0.3	0.6	0.4	0.3	0.5	0.2	0.2	1.0	1.4	0.7	0.4	0.4		0.4	0.3	0.6	0.7	0.5	
20:5n3	16.7	9.6	12.0	10.9	12.2	13.1	12.7	13.9	14.4	14.1	11.0	11.9	11.3	11.9	12.6		15.2	17.2	13.8	10.0	11.6	
22:6n3	14.8	12.1	16.0	17.9	18.1	18.5	19.2	16.7	19.7	16.5	13.0	16.9	18.8	18.6	18.6		15.0	16.5	14.9	12.2	17.0	
PUFA	49.2	48.8	52.3	52.2	54.4	53.8	53.7	50.4	53.2	50.6	50.4	52.0	52.8	54.9	52.9		49.0	51.5	47.2	50.7	53.7	
MUFA	19.1	15.1	14.9	14.8	15.0	14.0	14.1	16.6	15.1	14.1	15.3	12.9	13.9	14.5	13.5		19.0	17.5	15.5	14.2	12.4	
SAFA	31.7	36.0	32.8	33.1	30.5	32.2	32.3	32.9	31.7	35.3	34.3	35.1	33.3	30.6	33.6		32.0	30.9	37.2	35.1	33.9	
n3 PUFAs	44.8	42.6	48.1	48.4	50.4	50.4	50.0	45.4	48.6	46.8	44.7	48.4	50.0	51.4	50.1		43.5	45.9	43.5	45.7	50.1	
18:4n3+18:5n3+DHA	25.2	28.1	31.8	33.9	34.3	33.4	33.3	28.5	31.8	29.3	28.7	32.0	35.1	35.9	34.6		26.0	26.4	26.5	29.1	33.7	
16:1n7+16:4n1+EPA	26.9	15.0	16.8	14.9	16.8	18.4	18.3	22.7	22.9	21.2	16.9	16.0	15.7	16.6	17.7		27.4	29.5	22.5	15.5	15.9	
18:2n6+18:3n3	4.0	8.1	6.3	6.2	6.0	4.7	5.5	5.1	3.8	4.4	7.6	5.5	5.2	5.4	4.5		4.3	3.1	4.1	9.1	6.1	
bacterial markers	1.7	3.2	2.1	3.2	2.5	2.9	2.7	2.8	2.3	2.1	2.8	2.8	3.0	2.7	3.1		2.5	2.2	4.8	2.6	2.3	
DHA/EPA	4.6	1.6	1.9	1.3	1.3	1.5	1.6	2.2	2.0	3.1	1.9	1.7	1.3	1.2	1.4		2.8	3.5	3.5	1.8	1.9	

Supplementary Table I cont.

Mesocosm nr.	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5
CO ₂ conc.	180	180	180	180	180	180	354	354	354	354	354	354	354	354	354	1005	1005	1005	1005	1005	1005
exp. Day	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19
12:0	0.6	0.3	1.8		0.1	0.5	0.6	0.3	0.6	0.5	0.4	0.5	0.4	0.1	0.3	0.5	0.2	0.3	0.4	0.2	0.4
14:0	8.0	6.5	8.0		6.1	8.8	6.8	7.7	7.2	8.0	6.9	7.7	7.0	7.5	8.2	6.6	7.0	8.0	8.0	6.6	7.5
i-15:0	1.5	1.4	1.7		1.3	1.7	1.1	1.6	1.3	1.6	1.6	1.7	1.7	1.3	1.3	1.2	1.2	1.0	1.1	1.1	1.3
a-15:0	1.2	1.1	1.2		0.9	1.0	1.0	1.4	1.0	1.3	1.1	1.1	1.0	0.9	0.7	1.0	1.0	0.8	0.9	0.8	0.9
15:0	0.8	0.8	0.9		0.7	0.8	0.9	0.9	0.7	0.9	1.0	0.9	0.9	0.9	0.7	0.6	0.6	0.5	0.6	0.6	0.6
16:0	16.4	16.0	17.5		18.3	18.5	16.6	18.6	16.2	16.6	16.4	16.4	15.9	17.4	14.9	14.8	18.7	18.6	17.4	17.2	17.2
16:1n7	4.3	4.3	4.5		7.3	9.4	7.8	5.5	4.2	4.1	4.4	5.5	6.3	10.9	10.8	7.6	5.8	3.5	4.0	3.4	3.7
16:1n5	0.9	1.1	0.9		1.0	1.2	1.1	1.0	0.9	1.0	1.1	0.9	1.0	1.1	1.1	1.2	1.0	0.7	0.8	0.9	0.7
16:3n4	0.2	0.3	0.0		0.4	0.5	0.6	0.4	0.3	0.0	0.4	0.3	0.4	0.5	1.1	0.5	0.4	0.3	0.3	0.3	0.3
16:4n1	0.1	0.1	0.2		0.9	1.3	0.9	0.5	0.3	0.0	0.1	0.4	0.6	1.7	2.1	0.9	0.5	0.2	0.1	0.1	0.2
18:0	4.2	4.0	3.2		2.8	2.3	4.6	6.4	6.7	4.5	4.9	3.2	3.7	3.7	2.2	3.3	5.3	4.7	3.0	3.2	2.2
18:1n9	5.0	5.3	4.9		4.4	4.2	4.2	5.7	5.2	5.3	5.3	4.3	4.5	3.9	3.0	3.0	5.2	10.9	11.3	10.2	7.5
18:1n7	3.3	3.6	3.3		3.4	3.3	3.8	3.1	2.8	3.1	3.2	3.2	3.3	3.1	3.0	3.8	3.2	2.3	2.6	2.5	2.5
18:2n6 c	2.9	2.6	2.3		4.1	4.2	2.3	4.0	3.0	2.9	2.7	2.2	2.6	2.8	2.5	2.6	3.5	2.5	2.8	3.2	2.7
18:3n3	2.7	2.9	2.5		2.6	1.9	2.5	3.2	2.7	2.5	2.5	2.0	2.2	1.5	1.1	3.1	4.5	4.6	3.9	3.9	3.0
18:4n3	8.1	7.8	7.0		6.5	6.0	7.2	9.0	8.1	6.8	6.4	5.8	6.0	5.0	4.7	8.8	12.0	11.6	9.3	9.1	7.9
18:5n3	7.4	8.9	9.8		7.9	3.4	4.1	5.6	6.9	9.0	9.0	8.5	7.4	4.4	4.1	4.5	5.5	5.3	6.7	9.2	9.8
20:4n3	0.2	0.5	0.4		0.5	0.4	0.4	0.8	0.3	0.3	0.4	0.4	0.5	0.5	0.3	0.1	0.8	0.1	0.2	0.5	0.5
20:5n3	11.3	11.9	11.3		13.2	14.0	14.8	10.2	11.9	10.7	11.5	12.9	13.9	16.7	18.7	16.1	10.2	8.6	8.8	9.1	10.7
22:6n3	18.8	19.4	17.2		16.3	13.7	15.8	11.9	17.1	19.5	19.3	19.8	18.3	14.3	16.2	17.5	11.9	13.3	16.0	16.8	18.6
PUFA	52.6	55.1	50.9		53.1	46.2	50.2	47.1	52.0	52.3	53.3	53.4	53.3	48.7	52.7	55.4	50.1	47.9	49.1	52.8	54.6
MUFA	13.7	14.3	13.7		16.1	20.0	17.2	15.5	13.3	13.5	14.0	14.1	15.3	19.0	18.1	15.9	15.2	17.5	18.8	17.0	14.5
SAFA	33.7	30.6	35.5		30.8	33.8	32.7	37.5	34.7	34.2	32.7	32.5	31.4	32.3	29.2	28.7	34.6	34.6	32.1	30.1	30.9
n3 PUFAs	49.0	51.6	48.3		47.2	40.0	45.7	41.4	47.7	49.1	49.7	50.1	49.2	42.8	46.1	50.7	45.1	44.5	45.6	48.9	51.1
18:4n3+18:5n3+DHA	34.2	36.1	34.1		30.7	23.2	27.2	26.5	32.0	35.3	34.8	34.0	31.6	23.6	25.0	30.8	29.4	30.2	32.1	35.2	36.3
16:1n7+16:4n1+EPA	15.8	16.3	16.0		21.4	24.7	23.6	16.2	16.4	14.8	16.0	18.8	20.8	29.3	31.5	24.6	16.5	12.3	13.0	12.6	14.5
18:2n6+18:3n3	5.6	5.5	4.8		6.7	6.1	4.8	7.3	5.7	5.4	5.2	4.2	4.8	4.3	3.5	5.7	8.0	7.1	6.6	7.0	5.7
bacterial markers	2.7	2.5	2.9		2.3	2.7	2.1	3.0	2.4	2.9	2.7	2.8	2.6	2.2	2.0	2.2	2.3	1.8	2.0	1.9	2.1
DHA/EPA	1.5	1.3	1.1		1.7	4.1	3.6	1.8	1.7	1.2	1.3	1.5	1.9	3.8	4.6	3.5	1.9	1.6	1.3	1.0	1.1

Supplementary Table I cont.

Mesocosm nr.	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	
CO2	1005	1005	1005	780	780	780	780	780	780	780	780	780	180	180	180	180	180	180	180	180	
exp. Day	21	23	25	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25
12:0	0.4	0.2	0.5	0.4	0.3	0.4	0.4	0.2	0.5	0.5	0.2	0.5	0.4	0.2	0.5		0.5	0.5	0.3	0.1	0.4
14:0	6.8	6.2	6.8	6.3	7.4	7.7	8.0	6.6	7.5	6.7	6.5	6.9	6.5	6.9	7.6		7.1	8.0	7.2	7.2	8.2
i-15:0	1.3	1.4	1.3	1.2	1.3	1.2	1.4	1.3	1.4	1.3	1.3	1.3	1.2	1.5	1.5		1.6	1.7	1.3	1.3	1.1
a-15:0	0.8	0.8	0.8	1.0	1.1	1.0	1.1	0.9	1.0	0.8	0.8	0.8	1.0	1.3	1.2		1.2	1.2	0.9	0.9	0.8
15:0	0.6	0.6	0.6	0.7	0.7	0.6	0.7	0.7	0.7	0.6	0.7	0.6	0.7	0.9	0.9		1.0	1.0	0.9	0.8	0.6
16:0	17.0	17.8	16.1	15.5	18.0	16.8	16.8	15.9	16.3	16.4	18.0	16.1	15.3	17.6	16.7		15.9	16.7	16.1	16.3	14.5
16:1n7	3.9	5.4	5.7	6.2	6.7	3.7	3.6	3.8	4.2	4.2	5.9	6.5	6.0	5.2	3.3		4.2	4.8	5.4	9.5	9.8
16:1n5	0.7	0.7	0.7	1.2	1.0	0.8	0.8	0.9	0.8	0.7	0.8	0.8	1.4	1.2	1.1		1.4	1.1	1.0	1.2	1.1
16:3n4	0.2	0.3	0.4	0.4	0.5	0.3	0.2	0.3	0.0	0.2	0.3	0.4	0.4	0.4	0.3		0.3	0.0	0.2	0.4	0.8
16:4n1	0.2	0.5	0.6	0.7	0.7	0.2	0.1	0.1	0.2	0.3	0.6	0.6	0.7	0.5	0.2		0.1	0.2	0.4	1.4	1.5
18:0	2.6	2.7	2.3	6.0	6.5	4.7	4.3	2.9	2.3	2.2	2.4	2.0	5.4	6.8	6.8		5.2	4.4	3.1	3.1	1.8
18:1n9	6.2	5.1	3.9	3.1	5.1	7.4	7.3	7.4	5.0	4.4	4.1	3.3	3.0	6.0	4.6		5.7	5.0	4.5	4.1	3.0
18:1n7	2.4	2.5	2.3	3.5	3.4	2.5	2.6	2.7	2.6	2.4	2.6	2.5	3.1	3.0	2.9		3.3	3.3	3.3	3.6	2.7
18:2n6 c	3.3	4.4	3.8	2.6	3.6	2.9	3.0	3.3	2.4	3.0	4.1	3.8	2.6	4.3	2.7		2.7	2.2	2.3	2.6	2.1
18:3n3	3.2	2.9	1.9	3.0	3.5	4.1	3.2	3.2	2.5	3.0	2.7	1.8	2.9	3.2	2.5		2.3	1.8	2.1	1.9	1.4
18:4n3	7.8	7.7	6.2	8.4	10.0	10.8	7.9	7.8	7.1	7.5	7.4	5.8	8.0	8.3	6.6		6.2	5.6	6.1	6.2	6.0
18:5n3	9.9	10.3	9.4	4.4	4.9	6.1	7.9	9.8	10.8	10.6	10.1	9.3	4.9	5.6	6.9		8.1	8.2	8.8	7.4	7.1
20:4n3	0.7	0.8	0.5	0.1	0.7	0.1	0.2	0.6	0.5	0.7	0.7	0.4	0.7	0.8	0.2		0.5	0.3	0.4	0.4	0.3
20:5n3	11.1	11.4	13.5	14.6	11.3	10.6	10.3	11.4	11.9	11.9	11.7	13.2	14.2	10.9	12.0		11.7	11.9	11.7	14.1	15.7
22:6n3	19.1	17.0	20.1	18.1	12.0	15.7	18.1	19.1	20.2	20.6	18.2	20.9	19.3	13.6	19.5		19.7	20.3	22.0	15.9	18.3
PUFA	56.7	56.0	57.8	53.6	48.0	52.3	51.9	56.3	56.6	58.7	56.3	57.5	55.0	48.8	51.8		52.2	51.2	55.1	51.5	55.2
MUFA	13.4	13.8	12.8	14.4	16.1	14.6	14.4	14.7	12.7	11.9	13.4	13.3	13.8	15.4	12.0		14.6	14.5	14.3	18.4	16.7
SAFA	30.0	30.2	29.5	32.0	35.9	33.1	33.7	28.9	30.7	29.4	30.3	29.1	31.2	35.8	36.2		33.1	34.4	30.6	30.1	28.1
n3 PUFAs	52.6	50.3	52.4	49.3	42.6	48.4	48.3	52.2	53.6	55.0	50.9	52.2	50.6	42.9	48.1		48.7	48.4	51.8	46.3	49.7
18:4n3+18:5n3+DHA	36.8	35.0	35.6	30.9	26.9	32.6	33.9	36.8	38.2	38.8	35.7	36.0	32.2	27.5	33.0		34.0	34.1	36.9	29.6	31.3
16:1n7+16:4n1+EPA	15.2	17.3	19.8	21.6	18.7	14.5	13.9	15.3	16.3	16.4	18.2	20.4	20.9	16.6	15.4		16.0	17.0	17.5	25.1	27.0
18:2n6+18:3n3	6.6	7.3	5.8	5.6	7.1	7.0	6.3	6.5	4.9	6.0	6.8	5.5	5.5	7.5	5.2		5.0	4.0	4.4	4.4	3.5
bacterial markers	2.1	2.2	2.1	2.2	2.5	2.2	2.5	2.2	2.4	2.2	2.1	2.1	2.2	2.8	2.7		2.8	2.9	2.2	2.2	1.9
DHA/EPA	1.1	1.1	1.4	3.3	2.3	1.7	1.3	1.2	1.1	1.1	1.2	1.4	2.9	2.0	1.7		1.4	1.5	1.3	1.9	2.2

Supplementary Table I cont.

Mesocosm nr.	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9
CO2	457	457	457	457	457	457	457	457	457	1356	1356	1356	1356	1356	1356	1356	1356	1356
exp. Day	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25
12:0		0.3	0.6	0.7	0.3		0.5	0.3	0.5	0.6	0.2	0.4	0.5	0.3	0.5	0.5	0.3	0.7
14:0		7.0	7.6	8.2	6.5		6.7	8.0	7.5	6.4	6.3	7.1	7.7	6.7	6.9	6.5	6.5	7.0
i-15:0		1.4	1.5	1.8	1.5		1.5	1.4	1.2	1.2	1.5	1.3	1.4	1.3	1.3	1.2	1.4	1.5
a-15:0		1.2	1.2	1.3	1.1		1.0	1.0	0.7	1.2	1.3	1.0	1.2	0.9	0.8	0.8	0.8	0.9
15:0		0.9	0.8	0.9	0.9		0.8	0.8	0.5	0.9	0.8	0.7	0.7	0.7	0.6	0.5	0.6	0.6
16:0		18.8	17.0	17.3	17.1		17.3	18.9	15.8	18.6	17.8	17.3	17.7	16.9	16.3	16.0	16.9	14.8
16:1n7		5.6	4.1	3.9	4.2		5.5	7.4	7.9	8.2	5.3	4.6	3.2	3.3	3.2	4.1	5.2	5.8
16:1n5		1.1	1.0	1.2	1.2		0.9	1.0	1.0	1.2	1.2	0.9	1.0	1.0	0.9	0.8	0.9	0.9
16:3n4		0.5	0.3	0.2	0.3		0.2	0.4	0.5	0.6	0.5	0.4	0.0	0.3	0.0	0.2	0.3	0.5
16:4n1		0.5	0.3	0.0	0.2		0.3	0.7	0.8	0.8	0.4	0.4	0.0	0.1	0.2	0.2	0.4	0.5
18:0		7.8	6.9	5.8	5.7		4.0	3.1	1.7	7.7	8.5	6.3	5.1	3.5	2.7	2.5	3.2	2.2
18:1n9		5.6	5.0	4.9	5.3		4.2	3.9	3.4	4.4	6.2	6.4	6.6	6.0	4.4	3.7	3.3	2.9
18:1n7		3.1	2.9	2.9	3.1		3.2	3.0	2.5	4.1	3.9	3.3	2.7	2.7	2.5	2.6	2.8	2.7
18:2n6 c		4.1	2.9	2.7	2.8		2.7	3.0	3.2	2.8	4.3	2.7	3.3	3.5	2.8	3.2	3.2	2.7
18:3n3		3.6	3.1	2.5	2.7		2.5	2.1	1.8	2.8	3.4	3.4	3.5	3.7	2.9	3.4	3.2	2.1
18:4n3		8.9	7.6	6.5	6.8		6.6	6.6	6.6	7.7	9.8	9.2	8.2	9.1	8.5	8.3	8.0	7.4
18:5n3		5.2	6.5	8.7	9.6		9.8	9.9	11.1	3.8	5.4	6.4	10.0	12.8	13.6	12.7	12.5	11.2
20:4n3		0.7	0.2	1.0	0.5		0.5	0.4	0.3	0.1	0.8	0.2	0.3	0.5	0.4	0.5	0.5	0.1
20:5n3		10.2	11.8	10.0	10.7		10.4	10.0	11.6	13.5	9.7	11.3	8.8	8.7	10.5	10.4	10.2	12.2
22:6n3		11.9	16.4	17.7	18.5		19.7	16.7	19.3	10.6	11.1	14.1	16.2	16.9	19.6	20.1	18.7	21.1
PUFA		46.4	50.0	49.9	52.6		53.4	50.7	56.6	44.2	46.2	49.3	50.8	56.2	59.1	59.9	57.6	58.9
MUFA		15.5	13.4	13.1	13.7		14.1	15.3	14.9	18.2	16.7	15.5	13.8	13.0	11.2	11.4	12.2	12.4
SAFA		38.1	36.6	37.0	33.6		32.5	34.0	28.6	37.6	37.2	35.2	35.4	30.8	29.7	28.7	30.2	28.7
n3 PUFAs		40.8	46.0	46.7	48.9		49.9	46.1	51.4	39.3	40.3	45.3	47.3	51.9	55.9	56.0	53.4	54.9
18:4n3+18:5n3+DHA		26.0	30.5	32.9	34.9		36.1	33.3	37.0	22.1	26.2	29.7	34.4	38.8	41.6	41.1	39.2	39.7
16:1n7+16:4n1+EPA		16.3	16.2	13.9	15.1		16.2	18.1	20.2	22.6	15.4	16.3	12.0	12.0	13.8	14.7	15.8	18.5
18:2n6+18:3n3		7.6	6.0	5.2	5.5		5.2	5.1	5.0	5.6	7.7	6.2	6.8	7.2	5.8	6.5	6.3	4.7
bacterial markers		2.7	2.8	3.1	2.6		2.4	2.4	1.8	2.3	2.9	2.3	2.6	2.2	2.1	2.0	2.3	2.4
DHA/EPA		2.0	1.8	1.2	1.1		1.1	1.0	1.0	3.5	1.8	1.8	0.9	0.7	0.8	0.8	0.8	1.1

Supplementary Table II: Fatty acid content (μg FA per mg C) in all mesocosms at each sampling day. Only fatty acids accounting $>1\%$ in at least one sample are shown. Missing values are samples lost during analyses.

Mesocosm nr.	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3
CO2	658	658	658	658	658	658	658	658	658	256	256	256	256	256	256	256	256	256	180	180	180
exp. Day	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25	4	8	11
12:0	0.7	0.3	0.6	0.6	0.2	0.8	0.6	0.2	0.9	0.7	0.1	0.8	0.7	0.2	0.6		0.2	0.5	0.9	0.7	0.6
14:0	7.8	9.1	9.8	8.1	6.3	8.0	7.5	4.9	12.6	9.6	4.5	9.3	8.7	4.9	7.5		8.1	15.0	10.3	14.3	8.6
i-15:0	1.2	2.0	1.6	1.7	1.5	1.9	1.9	1.2	2.3	1.8	1.0	1.7	1.9	1.2	1.7		1.5	2.0	1.7	2.4	1.4
a-15:0	1.0	1.7	1.4	1.7	1.1	1.5	1.1	0.7	1.4	1.6	0.9	1.4	1.4	0.9	1.2		0.9	1.1	6.8	2.0	1.1
15:0	0.8	1.0	0.9	0.9	0.8	1.0	0.9	0.7	1.4	1.1	0.5	0.9	1.0	0.7	0.9		0.8	1.0	1.4	1.2	0.7
16:0	20.9	20.9	23.1	17.1	16.9	19.0	18.5	11.9	26.5	25.7	11.9	19.1	18.6	12.7	15.9		16.2	21.6	27.3	29.4	18.3
16:1n7	12.0	5.7	6.2	4.3	4.6	5.7	5.9	5.3	12.2	10.1	3.6	4.4	5.0	3.5	4.5		10.4	15.4	14.1	8.7	4.3
16:1n5	1.3	1.2	1.1	1.0	1.0	1.0	1.0	0.8	1.8	1.8	0.7	1.1	1.4	1.0	1.1		1.2	1.6	1.7	1.5	0.8
16:3n4	0.7	0.6	0.4	0.2	0.4	0.4	0.2	0.3	0.9	0.7	0.3	0.0	0.0	0.3	0.0		0.5	1.4	0.9	0.7	0.3
16:4n1	1.5	0.6	0.5	0.0	0.1	0.3	0.3	0.6	1.5	1.3	0.4	0.3	0.0	0.1	0.3		1.5	2.5	1.3	0.7	0.3
18:0	8.3	6.5	7.5	3.8	4.0	3.6	4.2	2.5	4.5	14.6	4.0	6.0	4.4	2.9	3.2		2.7	3.0	16.6	9.3	4.7
18:1n9	5.6	7.2	9.4	7.0	6.7	5.9	5.3	3.2	5.9	5.0	3.9	5.5	5.3	4.0	4.0		3.6	4.1	5.9	9.4	5.2
18:1n7	5.7	3.6	4.0	3.1	3.1	3.2	3.2	2.1	4.1	5.3	2.2	3.4	3.8	2.8	2.9		3.3	4.2	5.3	4.8	2.9
18:2n6 c	2.5	5.2	4.2	3.4	3.2	2.8	3.2	2.1	4.1	3.1	2.8	3.2	2.9	2.1	2.1		2.6	2.9	3.4	6.3	2.8
18:3n3	2.8	4.2	4.7	3.1	3.0	2.7	2.8	1.4	2.1	4.0	2.4	3.1	3.0	2.2	2.1		1.6	1.6	3.9	9.4	3.7
18:4n3	8.8	11.7	13.4	7.8	7.3	7.2	6.9	3.7	8.1	13.3	6.8	9.3	8.4	6.0	6.4		5.4	7.3	13.6	19.7	11.3
18:5n3	4.8	7.0	8.8	9.2	9.3	9.9	8.7	4.3	11.4	7.3	3.9	7.9	10.2	7.5	8.8		5.3	7.2	7.0	9.3	6.6
20:3n3	0.4	0.1	0.6	0.3	0.1	0.2	0.2	0.2	0.3	0.4	0.1	0.5	0.3	0.1	0.2		0.2	0.5	0.5	0.2	0.4
20:5n3	21.8	11.3	16.9	11.5	12.6	15.0	14.1	9.5	23.2	22.7	7.5	13.5	13.0	9.3	11.8		14.7	25.1	24.4	17.2	12.4
22:6n3	19.4	14.2	22.5	19.1	18.6	21.2	21.3	11.3	31.7	26.4	8.8	19.3	21.5	14.6	17.4		14.5	24.1	26.4	20.9	18.2
Total fatty acids	131.1	121.5	140.6	106.2	105.8	114.7	110.7	70.9	161.0	160.5	70.4	114.0	114.3	80.4	93.9		101.0	145.7	177.3	178.7	107.0
PUFA	64.5	57.4	73.5	55.4	56.0	61.7	59.4	34.3	85.6	81.1	34.3	59.3	60.4	43.0	49.7		47.4	75.1	83.8	86.8	57.4
MUFA	25.0	17.8	21.0	15.7	15.5	16.0	15.5	11.3	24.4	22.7	10.4	14.7	15.9	11.3	12.7		18.4	25.5	27.5	24.3	13.3
SAFA	41.6	42.3	46.1	35.1	31.4	36.9	35.7	22.4	51.0	56.7	23.3	40.0	38.1	23.9	31.6		31.0	45.1	66.0	60.2	36.2
n3 PUFAs	58.7	50.0	67.6	51.4	51.8	57.8	55.3	30.9	78.2	75.1	30.4	55.2	57.1	40.2	47.0		42.1	67.0	77.1	78.2	53.6
18:4n3+18:5n3+DHA	33.0	33.0	44.7	36.1	35.3	38.3	36.9	19.4	51.1	47.0	19.5	36.4	40.1	28.1	32.5		25.2	38.5	46.9	49.9	36.1
A																					
16:1n7+16:4n1+EPA	35.3	17.6	23.6	15.8	17.3	21.1	20.3	15.4	36.9	34.0	11.5	18.2	18.0	13.0	16.6		26.6	43.0	39.9	26.6	17.0
18:2n6+18:3n3	5.3	9.5	8.8	6.5	6.2	5.4	6.1	3.5	6.2	7.1	5.2	6.3	5.9	4.2	4.2		4.2	4.5	7.3	15.6	6.5
DHA/EPA	0.9	1.3	1.3	1.7	1.5	1.4	1.5	1.2	1.4	1.2	1.2	1.4	1.7	1.6	1.5		1.0	1.0	1.1	1.2	1.5

Supplementary Table II cont.

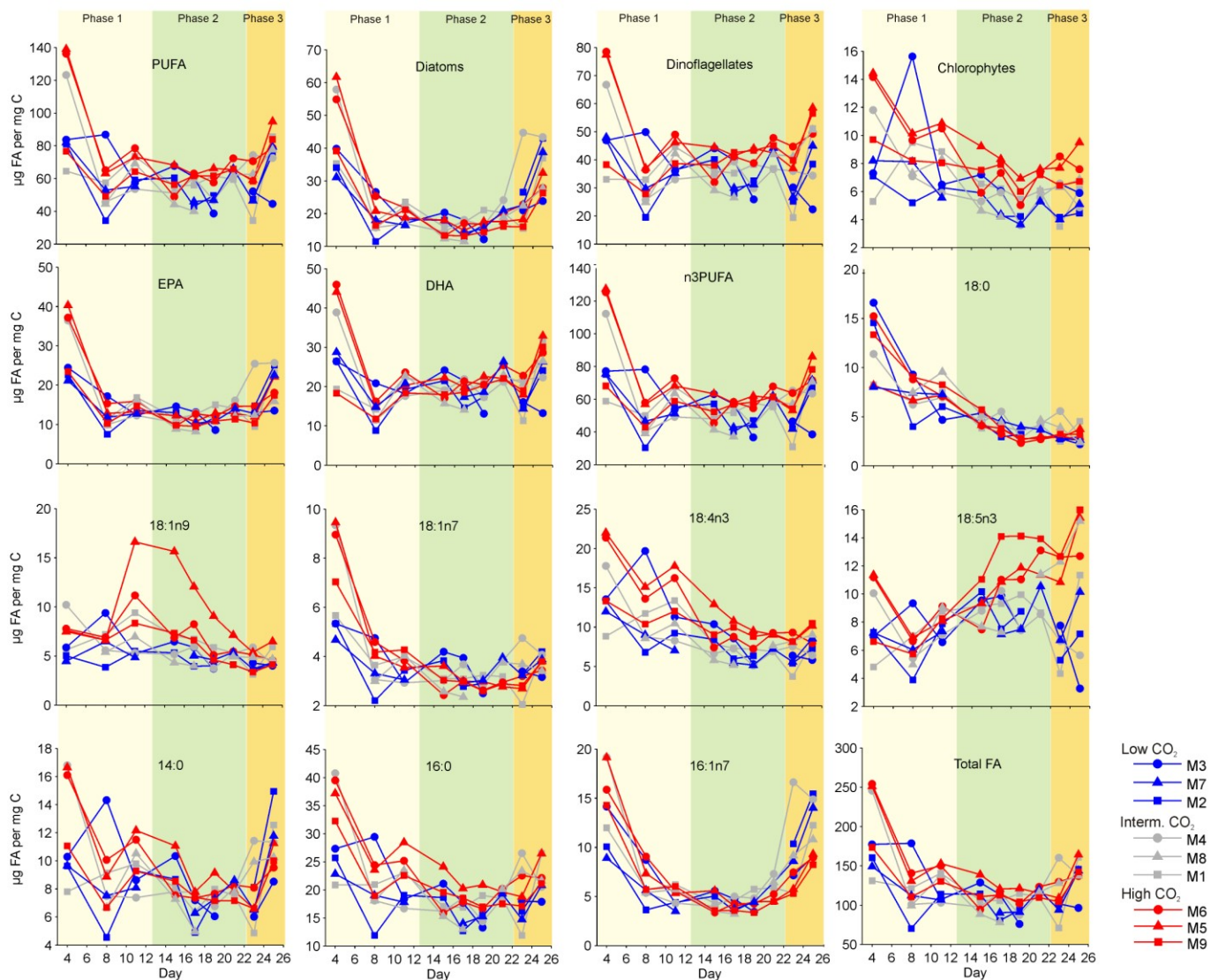
Mesocosm nr.	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5
CO2	180	180	180	180	180	180	354	354	354	354	354	354	354	354	354	1005	1005	1005	1005	1005	1005
exp. Day	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19
12:0	0.7	0.3	1.4		0.1	0.5	1.5	0.2	0.6	0.5	0.4	0.4	0.4	0.2	0.4	1.2	0.2	0.5	0.5	0.2	0.5
14:0	10.3	7.2	6.1		6.0	8.5	16.8	7.5	7.4	7.8	7.8	6.8	8.1	11.4	11.3	16.7	8.9	12.2	11.1	7.8	9.1
i-15:0	1.9	1.6	1.3		1.3	1.6	2.7	1.6	1.4	1.5	1.8	1.5	1.9	2.1	1.7	3.1	1.6	1.6	1.6	1.3	1.5
a-15:0	1.6	1.2	0.9		0.9	1.0	2.5	1.4	1.1	1.3	1.2	1.0	1.1	1.4	1.0	2.4	1.3	1.2	1.3	1.0	1.0
15:0	1.0	0.9	0.7		0.7	0.7	2.1	0.8	0.7	0.9	1.1	0.8	1.0	1.3	1.0	1.6	0.8	0.8	0.8	0.7	0.7
16:0	21.1	17.7	13.3		18.0	17.9	40.8	18.1	16.7	16.2	18.5	14.4	18.5	26.5	20.5	37.2	23.6	28.5	24.1	20.3	20.9
16:1n7	5.6	4.7	3.4		7.1	9.1	19.2	5.4	4.3	4.0	5.0	4.8	7.3	16.6	14.9	19.1	7.3	5.3	5.6	4.0	4.5
16:1n5	1.2	1.2	0.7		1.0	1.2	2.7	1.0	0.9	1.0	1.3	0.8	1.2	1.7	1.6	3.1	1.3	1.1	1.1	1.0	0.9
16:3n4	0.3	0.4	0.0		0.4	0.4	1.5	0.4	0.3	0.0	0.4	0.3	0.4	0.8	1.5	1.2	0.5	0.4	0.4	0.4	0.3
16:4n1	0.1	0.2	0.2		0.9	1.2	2.3	0.5	0.3	0.0	0.1	0.3	0.7	2.6	2.8	2.3	0.6	0.3	0.2	0.1	0.2
18:0	5.4	4.4	2.4		2.8	2.2	11.4	6.2	7.0	4.4	5.5	2.8	4.3	5.6	3.0	8.2	6.7	7.2	4.1	3.8	2.6
18:1n9	6.5	5.9	3.7		4.3	4.0	10.2	5.6	5.3	5.2	6.0	3.8	5.3	5.9	4.2	7.5	6.6	16.6	15.6	12.1	9.1
18:1n7	4.2	3.9	2.5		3.4	3.2	9.3	3.1	2.9	3.0	3.7	2.8	3.8	4.8	4.1	9.5	4.0	3.5	3.6	3.0	3.0
18:2n6 c	3.7	2.9	1.7		4.0	4.0	5.8	3.9	3.1	2.9	3.1	1.9	3.0	4.3	3.4	6.6	4.4	3.9	3.9	3.7	3.3
18:3n3	3.5	3.2	1.9		2.6	1.9	6.0	3.2	2.8	2.4	2.8	1.7	2.6	2.3	1.5	7.9	5.7	7.0	5.4	4.6	3.6
18:4n3	10.4	8.6	5.3		6.4	5.8	17.8	8.8	8.3	6.6	7.3	5.1	6.9	7.6	6.4	22.0	15.1	17.8	12.9	10.8	9.5
18:5n3	9.6	9.9	7.5		7.8	3.3	10.1	5.4	7.1	8.8	10.2	7.4	8.6	6.6	5.6	11.4	6.9	8.1	9.3	10.9	11.9
20:3n3	0.3	0.1	0.0		0.1	0.0	0.6	0.1	0.4	0.3	0.1	0.2	0.2	0.4	0.5	0.7	0.1	0.4	0.3	0.1	0.2
20:5n3	14.6	13.2	8.6		13.0	13.5	36.5	9.9	12.3	10.5	13.0	11.3	16.1	25.5	25.7	40.3	12.8	13.2	12.2	10.8	12.9
22:6n3	24.2	21.4	13.1		16.1	13.3	38.9	11.5	17.6	19.0	21.9	17.3	21.2	21.8	22.3	44.1	15.0	20.4	22.3	19.8	22.6
Total fatty acids	128.7	113.7	76.0		101.7	96.5	245.7	100.9	103.1	97.7	116.7	87.7	116.0	160.3	137.6	251.3	130.6	152.9	138.9	120.7	121.3
PUFA	67.7	61.0	38.7		52.2	44.6	123.3	45.7	53.6	51.1	60.4	46.8	61.9	74.3	72.5	139.1	63.2	73.2	68.2	62.4	66.2
MUFA	17.6	15.8	10.4		15.9	19.3	42.2	15.0	13.7	13.2	15.9	12.3	17.7	28.9	24.9	40.0	19.2	26.8	26.2	20.1	17.5
SAFA	43.4	33.9	26.9		30.3	32.6	80.3	36.4	35.8	33.4	37.0	28.5	36.4	49.3	40.1	72.2	43.7	52.9	44.6	35.6	37.5
n3 PUFAs	63.1	57.1	36.7		46.4	38.6	112.2	40.2	49.2	48.0	56.3	43.9	57.1	65.3	63.5	127.4	56.9	68.1	63.3	57.7	62.0
18:4n3+18:5n3+DHA	44.1	39.9	25.9		30.2	22.4	66.7	25.7	33.0	34.5	39.4	29.8	36.7	36.0	34.4	77.5	37.0	46.2	44.5	41.5	44.0
16:1n7+16:4n1+EPA	20.3	18.1	12.2		21.0	23.8	57.9	15.8	17.0	14.4	18.1	16.5	24.1	44.7	43.4	61.7	20.8	18.8	18.0	14.9	17.6
18:2n6+18:3n3	7.2	6.0	3.6		6.6	5.9	11.8	7.1	5.9	5.3	5.9	3.6	5.6	6.6	4.9	14.4	10.1	10.9	9.2	8.3	6.9
DHA/EPA	1.7	1.6	1.5		1.2	1.0	1.1	1.2	1.4	1.8	1.7	1.5	1.3	0.9	0.9	1.1	1.2	1.5	1.8	1.8	1.8

Supplementary Table II cont.

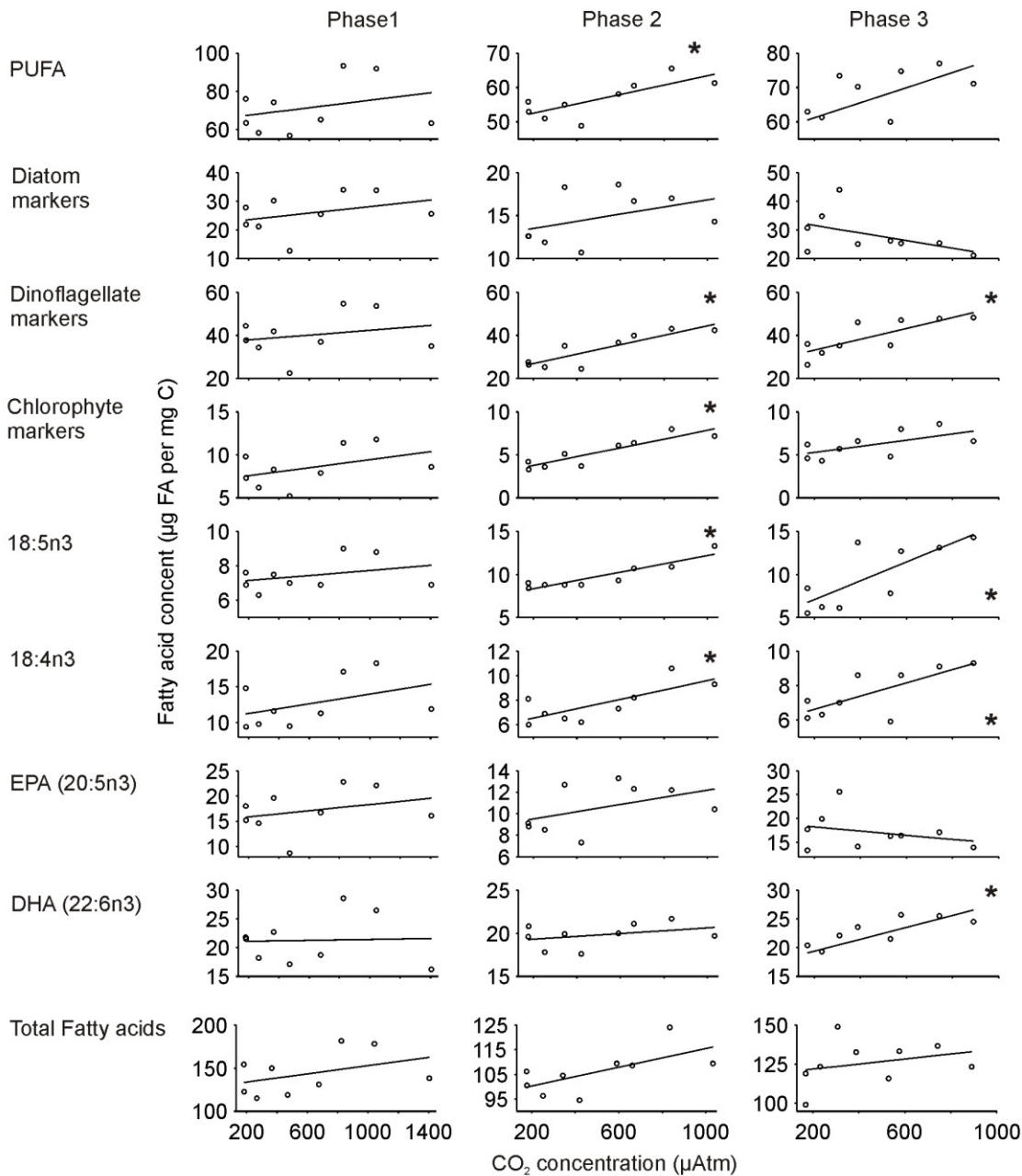
Mesocosm nr.	5	5	5	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	
CO2	1005	1005	1005	780	780	780	780	780	780	780	780	780	180	180	180	180	180	180	180	180	
exp. Day	21	23	25	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25
12:0	0.4	0.2	0.9	1.0	0.5	0.6	0.4	0.3	0.5	0.6	0.3	0.7	0.6	0.2	0.5		0.4	0.5	0.4	0.1	0.5
14:0	7.8	6.6	11.3	16.1	10.1	11.5	7.5	7.3	7.7	8.3	8.1	9.5	9.7	7.5	8.1		6.3	7.3	8.6	6.5	11.8
i-15:0	1.5	1.4	2.2	3.0	1.8	1.8	1.3	1.4	1.4	1.6	1.6	1.8	1.7	1.6	1.6		1.4	1.6	1.6	1.1	1.6
a-15:0	0.9	0.8	1.3	2.6	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.1	1.5	1.4	1.3		1.0	1.1	1.0	0.8	1.1
15:0	0.7	0.6	1.1	1.7	0.9	0.9	0.6	0.8	0.7	0.8	0.8	0.9	1.1	0.9	1.0		0.9	1.0	1.0	0.7	0.9
16:0	19.6	18.8	26.5	39.5	24.4	25.2	15.9	17.8	16.6	20.2	22.5	22.1	22.9	19.0	17.8		14.0	15.3	19.3	14.8	20.8
16:1n7	4.5	5.7	9.3	15.9	9.1	5.5	3.4	4.3	4.3	5.2	7.5	9.0	8.9	5.6	3.5		3.7	4.4	6.4	8.6	14.0
16:1n5	0.9	0.8	1.2	3.2	1.3	1.2	0.8	1.0	0.8	0.9	1.0	1.1	2.0	1.3	1.2		1.2	1.0	1.1	1.1	1.6
16:3n4	0.2	0.4	0.7	1.1	0.6	0.4	0.2	0.4	0.0	0.2	0.4	0.6	0.6	0.4	0.3		0.3	0.0	0.2	0.4	1.1
16:4n1	0.3	0.5	1.0	1.9	1.0	0.3	0.1	0.1	0.2	0.3	0.7	0.8	1.1	0.5	0.2		0.1	0.2	0.5	1.3	2.2
18:0	3.0	2.8	3.7	15.2	8.8	7.1	4.1	3.2	2.3	2.7	3.0	2.7	8.0	7.4	7.3		4.6	4.0	3.7	2.8	2.6
18:1n9	7.1	5.4	6.5	7.8	6.9	11.2	6.9	8.2	5.1	5.5	5.1	4.6	4.5	6.5	4.9		5.0	4.6	5.4	3.7	4.3
18:1n7	2.8	2.7	3.8	9.0	4.6	3.8	2.4	3.0	2.6	3.0	3.2	3.4	4.7	3.3	3.0		2.9	3.0	4.0	3.2	3.9
18:2n6 c	3.9	4.6	6.3	6.5	4.8	4.4	2.9	3.7	2.5	3.7	5.1	5.1	3.9	4.6	2.9		2.4	2.0	2.8	2.3	3.1
18:3n3	3.7	3.1	3.2	7.6	4.8	6.1	3.0	3.6	2.5	3.7	3.4	2.4	4.3	3.5	2.6		2.0	1.7	2.5	1.7	2.0
18:4n3	9.0	8.1	10.2	21.4	13.6	16.3	7.4	8.8	7.3	9.3	9.3	8.0	12.0	9.0	7.1		5.5	5.2	7.3	5.6	8.6
18:5n3	11.4	10.8	15.4	11.2	6.6	9.1	7.5	11.0	11.0	13.1	12.6	12.7	7.2	6.0	7.3		7.1	7.5	10.6	6.7	10.2
20:3n3	0.2	0.1	0.3	0.7	0.2	0.5	0.2	0.1	0.2	0.2	0.1	0.3	0.4	0.1	0.4		0.1	0.2	0.2	0.2	0.6
20:5n3	12.8	12.0	22.2	37.2	15.3	15.9	9.7	12.7	12.1	14.6	14.6	18.1	21.2	11.8	12.8		10.3	10.9	14.0	12.7	22.6
22:6n3	22.0	18.0	32.9	45.9	16.2	23.6	17.1	21.3	20.5	25.4	22.8	28.6	28.8	14.8	20.8		17.3	18.6	26.4	14.4	26.3
Total fatty acids	115.4	109.1	164.3	254.2	140.7	150.2	94.3	115.0	101.7	123.3	129.7	137.0	149.1	112.1	106.7		90.3	91.5	119.7	94.1	143.8
PUFA	65.4	59.1	94.9	136.3	65.2	78.5	49.0	63.1	57.6	72.3	70.6	78.8	82.0	52.9	55.2		45.9	46.8	66.0	46.5	79.3
MUFA	15.4	14.6	21.0	36.5	21.9	21.9	13.6	16.5	12.9	14.7	16.8	18.3	20.6	16.7	12.8		12.9	13.2	17.1	16.6	24.1
SAFA	34.6	31.9	48.4	81.4	48.7	49.8	31.8	32.4	31.2	36.2	38.0	39.9	46.6	38.9	38.7		29.2	31.5	36.6	27.2	40.4
n3 PUFAs	60.7	53.1	86.1	125.3	57.9	72.7	45.5	58.4	54.5	67.8	63.8	71.5	75.5	46.5	51.3		42.8	44.2	62.0	41.8	71.5
18:4n3+18:5n3+DHA	42.5	36.9	58.6	78.5	36.5	49.0	32.0	41.1	38.8	47.8	44.7	49.3	48.0	29.8	35.2		29.9	31.2	44.2	26.7	45.0
16:1n7+16:4n1+EPA	17.6	18.3	32.5	54.9	25.4	21.8	13.1	17.1	16.6	20.2	22.8	27.9	31.1	18.0	16.5		14.0	15.5	20.9	22.6	38.8
18:2n6+18:3n3	7.6	7.7	9.5	14.2	9.6	10.5	5.9	7.3	5.0	7.4	8.5	7.6	8.2	8.1	5.6		4.4	3.6	5.3	4.0	5.1
DHA/EPA	1.7	1.5	1.5	1.2	1.1	1.5	1.8	1.7	1.7	1.7	1.6	1.6	1.4	1.3	1.6		1.7	1.7	1.9	1.1	1.2

Supplementary Table II cont.

Mesocosm nr.	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9
CO2	457	457	457	457	457	457	457	457	457	1356	1356	1356	1356	1356	1356	1356	1356	1356
exp. Day	4	8	11	15	17	19	21	23	25	4	8	11	15	17	19	21	23	25
12:0		0.3	0.8	0.6	0.2		0.5	0.4	0.7	1.1	0.2	0.5	0.6	0.4	0.5	0.6	0.3	1.0
14:0		6.7	10.5	7.3	5.0		7.8	9.9	10.3	11.1	6.7	9.3	8.5	7.4	7.2	7.2	6.6	10.0
i-15:0		1.4	2.1	1.6	1.1		1.7	1.8	1.6	2.0	1.6	1.7	1.6	1.4	1.4	1.4	1.5	2.2
a-15:0		1.2	1.7	1.1	0.8		1.1	1.2	0.9	2.0	1.4	1.3	1.3	1.0	0.8	0.9	0.8	1.3
15:0		0.8	1.1	0.8	0.7		0.9	1.0	0.7	1.5	0.9	1.0	0.8	0.7	0.6	0.6	0.6	0.9
16:0		18.1	23.5	15.3	13.0		20.1	23.4	21.6	32.3	19.0	22.6	19.6	18.5	17.0	17.5	17.1	21.1
16:1n7		5.4	5.7	3.5	3.2		6.4	9.2	10.8	14.3	5.7	6.0	3.5	3.6	3.4	4.5	5.3	8.2
16:1n5		1.0	1.4	1.0	0.9		1.1	1.2	1.3	2.1	1.2	1.2	1.1	1.1	0.9	0.9	0.9	1.3
16:3n4		0.4	0.4	0.2	0.2		0.3	0.5	0.7	1.0	0.5	0.5	0.0	0.3	0.0	0.2	0.3	0.6
16:4n1		0.4	0.4	0.0	0.1		0.3	0.9	1.1	1.4	0.4	0.5	0.0	0.1	0.2	0.2	0.4	0.6
18:0		7.5	9.6	5.1	4.4		4.6	3.9	2.4	13.3	9.0	8.2	5.7	3.8	2.8	2.8	3.2	3.2
18:1n9		5.4	7.0	4.3	4.0		4.9	4.9	4.7	7.6	6.6	8.3	7.3	6.6	4.6	4.1	3.4	4.1
18:1n7		3.0	4.0	2.6	2.3		3.7	3.7	3.4	7.0	4.2	4.3	3.0	3.0	2.6	2.9	2.8	3.8
18:2n6 c		3.9	4.0	2.4	2.1		3.2	3.7	4.3	4.9	4.5	3.6	3.6	3.9	2.9	3.5	3.2	3.8
18:3n3		3.4	4.2	2.3	2.1		2.9	2.6	2.5	4.8	3.6	4.5	3.9	4.1	3.1	3.7	3.2	2.9
18:4n3		8.6	10.5	5.8	5.2		7.6	8.2	9.0	13.4	10.4	12.0	9.1	10.0	8.8	9.2	8.2	10.5
18:5n3		5.0	9.0	7.7	7.3		11.4	12.3	15.2	6.6	5.7	8.3	11.1	14.1	14.1	13.9	12.7	16.0
20:3n3		0.1	0.5	0.2	0.1		0.2	0.1	0.3	0.4	0.1	0.5	0.3	0.1	0.2	0.2	0.2	0.2
20:5n3		9.8	16.3	8.9	8.2		12.1	12.4	15.9	23.5	10.3	14.6	9.8	9.5	10.9	11.4	10.3	17.4
22:6n3		11.4	22.7	15.7	14.1		22.9	20.7	26.5	18.3	11.8	18.4	18.0	18.5	20.4	22.1	19.0	30.1
Total fatty acids		99.3	138.3	88.6	78.3		116.4	128.1	137.3	173.5	110.5	130.1	110.7	113.0	104.1	109.8	104.3	142.4
PUFA		44.5	69.1	44.2	40.0		62.2	62.7	77.7	76.6	49.2	64.2	56.3	61.7	61.5	65.8	58.5	83.8
MUFA		14.8	18.5	11.6	10.5		16.4	18.9	20.4	31.6	17.8	20.2	15.2	14.3	11.6	12.5	12.4	17.7
SAFA		36.6	50.7	32.8	25.6		37.8	42.1	39.2	65.3	39.6	45.8	39.2	33.8	30.9	31.5	30.6	40.9
n3 PUFAs		39.1	63.6	41.4	37.2		58.1	57.1	70.6	68.1	42.9	58.9	52.3	57.0	58.2	61.4	54.2	78.2
18:4n3+18:5n3+DHA		24.9	42.2	29.2	26.6		42.0	41.2	50.7	38.3	27.9	38.7	38.1	42.6	43.3	45.2	39.8	56.6
16:1n7+16:4n1+EPA		15.6	22.4	12.4	11.5		18.9	22.4	27.8	39.2	16.5	21.2	13.3	13.2	14.4	16.1	16.0	26.3
18:2n6+18:3n3		7.3	8.3	4.6	4.2		6.1	6.3	6.9	9.7	8.2	8.0	7.5	7.9	6.0	7.2	6.4	6.7
DHA/EPA		1.2	1.4	1.8	1.7		1.9	1.7	1.7	0.8	1.1	1.3	1.8	1.9	1.9	1.9	1.8	1.7



Supplementary Figure I: Temporal development of selected fatty acids ($\mu\text{g FA per mg C}$) during the experiment. Data from mesocosms with low CO_2 concentration (170-270 μAtm) are marked blue, those from mesocosms with intermediate CO_2 concentration (370-717 μAtm) are marked grey and those from mesocosms with high CO_2 concentration (544-1825 μAtm) are marked red. The different phases of the experiment are indicated (Phase 1= day -4 to 12, Phase 2= day 13 to 21, Phase 3= day 22 to 30).



Supplementary Figure II: Relationship between the amount of selected fatty acid markers (standardized to mg FA per mg C) against CO₂ concentration (µAtm) at different phases of the experiment. Amount of fatty acid markers and CO₂ concentrations were averaged over the time period of the three phases: Phase 1= day - 4 to 12, Phase 2= day 13 to 21, Phase 3= day 22 to end. A linear regression lines is fitted to the each data set. Asterisks (*) mark those relationships for which the linear regression analysis was statistical significant (p<0.05, see Supplementary Table III).

Supplementary Table III: Linear regression analyses of fatty acid markers (standardized to μg FA per mg C) against CO_2 concentration (μAtm) in different phases of the experiment. Amount of fatty acids markers and CO_2 concentrations were averaged over the time period of the three phases: Phase 1= day -4 to 12, Phase 2= day 13 to 21, Phase 3= day 22 to end. Entries in the table give the estimates for the intercept and the slope, the R^2 value and the statistical significant level given as p values and indicated as *** $p < 0.001$, ** $0.001 < p < 0.01$, * $0.01 < p < 0.05$)

		Intercept	slope	P	sign	R2
Phase 1	PUFA	65.46	0.010	0.426		-0.04
Phase 2	PUFA	49.75	0.014	0.015	*	0.54
Phase 3	PUFA	56.81	0.022	0.077	.	0.29
Phase 1	Diatom	22.42	0.006	0.342		0.00
Phase 2	Diatom	12.67	0.004	0.255		0.06
Phase 3	Diatom	34.22	-0.013	0.197		0.11
Phase 1	Dinoflagellates	36.72	0.006	0.542		-0.08
Phase 2	Dinoflagellates	22.46	0.022	0.002	**	0.72
Phase 3	Dinoflagellates	28.01	0.025	0.009	**	0.60
Phase 1	Chlorophytes	7.09	0.002	0.227		0.09
Phase 2	Chlorophytes	2.73	0.005	0.001	***	0.79
Phase 3	Chlorophytes	4.56	0.004	0.075	.	0.30
Phase 1	n3 PUFA	57.07	0.010	0.491		-0.06
Phase 2	n3 PUFA	33.12	0.029	0.007	**	0.63
Phase 3	n3 PUFA	49.73	0.023	0.041	*	0.40
Phase 1	18:5n3	6.99	0.001	0.367		-0.01
Phase 2	18:5n3	7.37	0.005	0.000	***	0.82
Phase 3	18:5n3	4.88	0.011	0.014	*	0.55
Phase 1	18:4n3	10.59	0.003	0.246		0.07
Phase 2	18:4n3	5.77	0.004	0.019	*	0.51
Phase 3	18:4n3	5.84	0.004	0.024	*	0.47
Phase 1	20:5n3	15.24	0.003	0.425		-0.04
Phase 2	20:5n3	8.83	0.003	0.203		0.11
Phase 3	20:5n3	19.06	-0.004	0.444		-0.04
Phase 1	22:6n3	21.00	0.000	0.914		-0.14
Phase 2	22:6n3	18.97	0.002	0.338		0.01
Phase 3	22:6n3	17.30	0.010	0.016	*	0.53
Phase 1	18:1n9	5.48	0.003	0.039	*	0.40
Phase 2	18:1n9	4.04	0.004	0.108		0.23
Phase 3	18:1n9	4.20	0.001	0.485		-0.06
Phase 1	Haptophytes	17.58	0.004	0.263		0.06
Phase 2	Haptophytes	13.15	0.009	0.001	**	0.76
Phase 3	Haptophytes	10.72	0.015	0.014	*	0.54
Phase 1	total FA	129.00	0.024	0.276		0.05
Phase 2	total FA	96.44	0.019	0.056	.	0.35
Phase 3	total FA	118.68	0.016	0.449		-0.05