

**Appendix 2**  $\delta^{13}\text{C}$  values (‰) of main PLFAs from North Sea zooplankton collected at North Dogger (ND), at the Oyster Grounds (OG) and at the Sean Gas fields in the Southern Bight (SB) from February 2007 to April 2008. See caption of Appendix 1 for species acronyms. \* = concentration-weighted mean; other = minor PLFA

Site	Date	Taxon	14:0	16:0	16:1 (n-7)	16:2 (n-4)	18:0	18:1 (n-7)	18:1 (n-9)	18:2 (n-6)	18:3 (n-3)	18:4 (n-3)	20:4 (n-3)	20:4 (n-6)	20:5 (n-3)	22:4 (n-6)	22:5 (n-3)	22:6 (n-3)	*Total FA	*Bacterial FA	*Other FA
ND	Feb. 07	Car	-24.0	-30.2	-17.6	-25.7	-28.5	-20.8	-4.8	-27.4	-32.2	-31.6	n.d.	-25.1	-27.2	n.d.	-28.8	-27.7	-27.2	-24.3	-25.7
ND	Feb. 07	Cfi	-19.1	-22.9	-19.3	-20.4	-19.6	-20.8	-21.2	-21.6	n.d.	-25.4	n.d.	n.d.	-23.9	n.d.	n.d.	-22.6	-22.7	-20.8	n.d.
ND	Feb. 07	Che	-24.8	-23.5	-22.8	n.d.	-22.4	-23.5	n.d.	-31.9	n.d.	n.d.	-31.3	-29.1	-25.4	n.d.	-27.9	-23.9	-24.5	-25.3	-28.8
ND	Feb. 07	Sel	-21.5	-21.3	-23.6	n.d.	-27.6	-22.1	n.d.	-39.0	n.d.	n.d.	-21.2	-21.9	-22.9	n.d.	-27.4	-22.2	-22.6	-23.4	-24.6
ND	Apr. 07	Car	-24.3	-23.2	-28.1	-32.3	-25.7	-26.5	-26.5	-32.6	-33.3	-31.8	-29.7	n.d.	-26.2	-26.8	-26.8	-25.7	-25.2	-26.9	-28.0
ND	Apr. 07	Cfi	-23.5	-23.7	-23.5	n.d.	-21.9	-23.5	-23.7	n.d.	n.d.	n.d.	n.d.	n.d.	-25.1	n.d.	-25.5	-24.9	-24.6	-23.6	-24.4
ND	Apr. 07	Che	-22.3	-23.4	-24.3	n.d.	-22.1	-23.3	-24.0	n.d.	n.d.	n.d.	-25.6	n.d.	-24.7	n.d.	-25.4	-24.7	-24.3	-22.9	-26.1
ND	Apr. 07	Sel	-25.7	-27.0	-17.4	-25.3	-26.1	-19.2	n.d.	-28.1	-29.4	-29.3	n.d.	n.d.	-26.4	n.d.	-27.9	-26.8	-26.4	-20.8	n.d.
ND	May 07	Cfi	-25.4	-24.6	-27.3	n.d.	-24.2	-24.8	n.d.	-39.2	n.d.	n.d.	-39.7	-30.9	-26.7	n.d.	-28.3	-26.4	-26.3	-20.1	-31.8
ND	May 07	Che	-23.5	-23.1	-28.7	n.d.	-30.7	-24.7	n.d.	-40.6	n.d.	n.d.	-41.1	n.d.	-24.5	n.d.	-28.6	-24.0	-24.7	-21.6	-34.5
ND	May 07	Pel	-26.4	-25.6	-30.9	n.d.	n.d.	-24.0	n.d.	-37.5	n.d.	n.d.	n.d.	-38.7	-27.2	n.d.	-29.4	-25.6	-26.8	-28.6	-37.7
ND	May 07	Sel	-27.4	-26.2	-29.5	n.d.	-27.7	-25.7	n.d.	-37.5	n.d.	-39.2	-41.0	-31.7	-29.6	n.d.	-22.0	-27.9	-28.2	-27.2	-29.5
ND	Sep. 07	Car	-26.8	-29.3	-24.4	-28.2	-29.3	-25.1	-26.1	-31.2	-34.7	-35.3	-33.2	-29.6	-30.4	n.d.	-29.9	-28.3	-28.9	-23.1	-29.1
ND	Sep. 07	Car	-26.1	-27.7	-18.9	-25.4	-27.3	-20.4	n.d.	-28.7	-31.6	-31.2	n.d.	-23.7	-28.0	-27.0	-26.2	-27.8	-27.5	-23.1	n.d.
ND	Sep. 07	Cfi	-21.5	-22.9	-20.7	-22.8	-22.5	-23.0	-24.1	-25.4	-26.2	-24.4	-26.2	n.d.	-24.9	n.d.	-25.7	-23.4	-23.7	-23.0	n.d.
ND	Sep. 07	Che	-26.2	-26.0	-25.1	-28.0	-26.7	-26.5	-27.7	-29.1	-29.9	-29.5	-28.7	-30.4	-29.7	n.d.	-28.5	-26.4	-26.8	-25.2	-24.8
ND	Sep. 07	Sel	-24.7	-24.5	-28.2	-27.2	-25.4	-26.6	-27.4	-29.9	-31.3	-29.6	-29.0	-26.2	-27.2	n.d.	-27.6	-25.0	-25.4	-25.1	-27.2
ND	Oct. 07	Car	-24.0	-26.6	-18.8	-26.7	-25.6	-21.1	n.d.	n.d.	-30.3	-27.5	n.d.	n.d.	-27.2	-21.5	-29.8	-26.0	-26.1	-23.4	n.d.
ND	Oct. 07	Cfi	-20.1	-24.0	n.d.	-17.9	-23.9	-26.6	-25.5	-23.1	-25.0	n.d.	-24.4	n.d.	-25.2	n.d.	n.d.	-23.5	-24.0	-26.6	n.d.
ND	Oct. 07	Che	-24.6	-25.8	-26.2	-24.0	-24.5	-24.8	-25.6	-24.8	-28.2	-24.1	-26.4	n.d.	-28.3	-27.2	-28.6	-24.7	-25.6	-23.2	n.d.
ND	Oct. 07	Sel	-25.3	-24.5	-29.3	-26.3	-26.1	-28.0	-27.9	-29.2	-30.9	-29.9	-29.3	-27.5	-27.5	n.d.	-27.7	-25.6	-26.0	-27.0	-27.8
ND	Oct. 07	Sel	-25.3	-24.5	-29.3	-26.3	-26.1	-28.0	-27.9	-29.2	-30.9	-29.9	-29.3	-27.5	-27.5	n.d.	-27.7	-25.6	-26.0	-27.0	-27.8

Appendix 2 continued.

Site	Date	Taxon	14:0	16:0	16:1 (n-7)	16:2 (n-4)	18:0	18:1 (n-7)	18:1 (n-9)	18:2 (n-6)	18:3 (n-3)	18:4 (n-3)	20:4 (n-3)	20:4 (n-6)	20:5 (n-3)	22:4 (n-6)	22:5 (n-3)	22:6 (n-3)	*Total FA	*Bacterial FA	*Other FA
ND	Jan. 08	Che	-23.1	-23.8	-22.7	-23.6	-22.4	-22.6	-23.8	-20.8	-25.5	n.d.	n.d.	n.d.	-25.3	n.d.	n.d.	-23.9	-24.0	-22.6	n.d.
ND	Jan. 08	Mlo	-21.2	-22.8	-21.2	-22.9	-23.1	-23.2	-23.8	-26.3	-28.7	-26.2	-24.4	-25.0	-25.5	-23.3	-26.8	-23.5	-23.6	-21.1	-21.0
ND	Jan. 08	Sel	-24.0	-23.4	-27.2	-26.4	-25.1	-25.9	-27.7	-27.6	-29.7	-27.0	-28.3	-26.4	-26.5	-26.0	-26.1	-22.9	-24.8	-25.9	-29.8
ND	Apr. 08	Cfi	-26.3	-27.6	-32.5	-28.5	-27.2	-27.6	-28.2	-30.9	-30.3	-31.2	-31.0	-33.5	-28.4	-27.2	-29.6	-26.3	-28.8	-27.5	-28.9
ND	Apr. 08	Che	-27.0	-27.4	-24.6	-26.5	-27.0	-27.6	-26.9	-29.0	-32.4	-29.6	-29.1	n.d.	-27.8	-29.3	-30.0	-26.7	-27.3	-24.9	-29.8
ND	Apr. 08	Che	-27.0	-27.4	-24.6	-26.5	-27.0	-27.6	-26.9	-29.0	-32.4	-29.6	-29.1	n.d.	-27.8	-29.3	-30.0	-26.7	-27.2	-25.3	-29.8
OG	Feb. 07	Cfi	-23.0	-23.0	-29.6	n.d.	-29.1	-23.7	n.d.	-48.5	n.d.	n.d.	-36.9	-36.4	-24.4	n.d.	-28.7	-22.9	-24.0	-22.6	-32.7
OG	Feb. 07	Che	-25.5	-23.7	-23.4	n.d.	-25.3	-24.8	n.d.	-31.6	n.d.	n.d.	n.d.	-28.7	-27.6	-30.3	-30.7	-26.0	-25.4	-25.5	-27.7
OG	Feb. 07	Mlo	-24.1	-24.7	-25.7	-27.0	-26.7	-27.7	-27.9	-28.2	-29.5	-30.7	-30.7	-26.0	-28.5	-24.1	-28.0	-25.5	-26.1	-24.0	-22.9
OG	Feb. 07	Sel	-24.1	-23.9	-24.8	n.d.	-23.5	-24.7	n.d.	-29.4	n.d.	n.d.	n.d.	-23.2	-26.1	-27.0	-24.7	-24.9	-24.7	-22.6	-27.1
OG	Feb. 07	Tlo	-21.3	-23.4	-19.3	n.d.	-23.3	-22.8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-24.2	n.d.	-28.6	-24.9	-24.0	-22.8	n.d.
OG	Apr. 07	Apa	-20.3	-24.4	-20.9	n.d.	-24.0	-20.9	n.d.	n.d.	n.d.	-25.5	n.d.	n.d.	-24.3	n.d.	-25.6	-26.1	-24.9	-20.9	n.d.
OG	Apr. 07	Car	-24.8	-27.9	-22.9	-28.5	-29.6	-24.4	-25.3	-30.8	-35.0	-32.3	n.d.	-27.7	-30.3	-28.6	-27.7	-29.3	-28.3	-21.8	-27.5
OG	Apr. 07	Cfi	-21.7	-23.2	-22.2	n.d.	-23.0	-22.2	-22.5	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-24.5	-25.2	-22.6	-25.1
OG	Apr. 07	Che	-22.3	-23.3	-23.5	n.d.	-23.3	-24.2	-25.2	n.d.	n.d.	n.d.	n.d.	n.d.	-23.8	-26.4	-23.7	-24.1	-23.8	-23.5	-25.9
OG	Apr. 07	Sel	-22.1	-24.2	-24.4	n.d.	n.d.	-24.8	-24.5	n.d.	n.d.	n.d.	-29.8	-25.7	-25.7	n.d.	-27.2	-26.2	-24.6	-24.7	-27.4
OG	Apr. 07	Tlo	-21.6	-23.3	-20.8	n.d.	-24.5	-22.8	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-24.3	-24.1	-23.9	-23.2
OG	Apr. 07	Zoe	-23.0	-23.0	-22.8	n.d.	-23.2	n.d.	-24.1	n.d.	n.d.	n.d.	n.d.	-25.2	-23.5	-25.2	n.d.	-24.4	-23.6	-22.9	-25.1
OG	May 07	Cfi	-21.5	-22.7	-34.4	n.d.	-23.5	-22.5	n.d.	-48.0	n.d.	n.d.	-42.3	n.d.	-25.5	n.d.	-29.3	-22.2	-23.7	-21.1	-32.1
OG	May 07	Che	-20.6	-21.2	-26.7	n.d.	-22.0	-25.1	n.d.	-31.6	n.d.	n.d.	-29.4	n.d.	-23.9	n.d.	-24.3	-21.7	-22.6	-23.7	-29.0
OG	May 07	Cty	-19.1	-19.6	n.d.	n.d.	-20.6	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-22.2	n.d.	n.d.	-20.1	-20.4	n.d.	n.d.
OG	May 07	Sel	-21.7	-20.5	-22.3	n.d.	-23.3	-21.7	n.d.	-26.9	n.d.	n.d.	-30.0	-31.4	-22.5	n.d.	-26.9	-19.8	-21.6	-21.3	-25.7
OG	May 07	Tlo	-21.4	-19.5	-27.7	n.d.	-23.8	-23.8	n.d.	-34.3	n.d.	n.d.	-31.8	n.d.	-24.1	n.d.	-28.5	-20.0	-21.7	-20.3	-30.9

Appendix 2 continued.

Site	Date	Taxon	14:0	16:0	16:1 (n-7)	16:2 (n-4)	18:0	18:1 (n-7)	18:1 (n-9)	18:2 (n-6)	18:3 (n-3)	18:4 (n-3)	20:4 (n-3)	20:4 (n-6)	20:5 (n-3)	22:4 (n-6)	22:5 (n-3)	22:6 (n-3)	*Total FA	*Bacterial FA	*Other FA
OG	Sep. 07	Che	-22.9	-24.2	-20.8	-22.2	-23.4	-21.4	-21.8	-23.2	n.d.	n.d.	n.d.	-27.0	-28.3	-28.7	-26.4	-25.0	-25.4	-21.4	n.d.
OG	Sep. 07	Cty	-23.6	-23.8	-22.8	-25.1	-25.1	-25.0	-25.3	-27.8	-28.1	-27.9	n.d.	-22.4	-26.4	-24.8	-25.6	-24.8	-24.7	-23.7	-26.8
OG	Sep. 07	Sel	-24.1	-25.3	-26.2	-26.0	-26.7	-25.1	-26.7	-32.1	-33.3	-32.4	-31.9	-26.1	-28.1	n.d.	-27.4	-25.7	-26.1	-24.3	-26.9
OG	Sep. 07	Zoe	-24.5	-25.4	-25.3	-27.1	-26.0	-26.5	-26.8	-31.9	-33.1	-31.3	-29.9	-27.4	-29.1	-31.1	-26.9	-26.9	-26.8	-25.4	-26.9
OG	Sep. 07	Zoe	-22.9	-24.2	-25.5	-27.3	-25.3	-27.8	-27.4	-28.5	-30.4	-30.3	-27.8	-26.0	-27.1	-26.1	-27.0	-25.2	-25.8	-25.6	-27.8
OG	Oct. 07	Che	-18.4	-20.3	-19.8	-24.3	-22.0	-20.5	-24.9	n.d.	n.d.	n.d.	n.d.	n.d.	-22.5	n.d.	-24.0	-23.2	-22.5	-20.5	n.d.
OG	Oct. 07	Cty	-18.6	-19.5	-20.0	-21.8	-21.4	-20.3	-21.8	-21.0	n.d.	-25.6	n.d.	n.d.	-22.9	-25.4	-24.3	-22.9	-21.9	-21.4	-20.0
OG	Oct. 07	Sel	-21.5	-23.2	-22.7	-23.6	-23.1	-20.3	-23.8	-24.8	-28.8	-28.3	-24.5	n.d.	-24.9	-27.5	-25.8	-24.2	-23.8	-22.6	-24.2
OG	Jan. 08	Che	-21.6	-22.9	-21.8	-22.1	-21.4	-21.7	-23.0	n.d.	n.d.	n.d.	n.d.	n.d.	-24.7	n.d.	n.d.	-23.4	-23.4	-21.7	n.d.
OG	Jan. 08	Sel	-21.7	-22.8	-23.4	-24.2	-23.5	-22.9	-24.3	-27.2	-30.3	-29.0	-27.6	-23.4	-25.2	-27.2	-25.9	-24.3	-24.0	-22.9	-24.6
OG	Jan. 08	Tlo	-23.5	-25.2	-28.8	n.d.	-30.9	-30.1	-26.4	n.d.	n.d.	n.d.	n.d.	n.d.	-28.1	n.d.	n.d.	-22.7	-29.0	-27.2	-31.0
OG	Apr. 08	Tlo	-28.9	-28.1	-28.4	-25.7	-27.1	-28.4	-26.7	-28.1	-29.2	-29.6	-28.1	n.d.	-30.5	n.d.	-27.7	-26.2	-27.8	-28.5	-31.3
SB	Feb. 07	Che	-23.3	-22.5	-24.9	-22.2	-22.4	-23.0	-22.8	-25.3	n.d.	n.d.	n.d.	n.d.	-25.4	n.d.	-25.5	-23.6	-23.5	-21.5	-22.0
SB	Feb. 07	Sel	-22.4	-22.7	-27.8	-23.2	-24.0	-25.2	-25.1	-30.7	n.d.	-33.9	-30.1	-24.9	-24.4	-23.4	-25.5	-23.0	-23.8	-22.9	-24.7
SB	Feb. 07	Sel	-23.5	-22.6	-27.5	n.d.	-28.2	-24.5	n.d.	-39.3	n.d.	n.d.	n.d.	-35.0	-24.9	n.d.	-30.7	n.d.	-25.2	-22.0	-36.1
SB	Feb. 07	Tlo	-21.3	-23.1	-19.8	-23.9	-23.2	-23.8	n.d.	n.d.	n.d.	-26.5	n.d.	-19.1	-25.3	-26.8	-27.8	-24.6	-24.1	-23.7	-20.1
SB	Apr. 07	Cfi	-24.2	-24.5	-24.1	n.d.	-23.3	-24.7	-24.6	n.d.	n.d.	n.d.	n.d.	n.d.	-26.6	n.d.	-25.4	-23.7	-24.7	-23.7	-24.9
SB	Apr. 07	Che	-24.8	-24.8	-24.5	n.d.	-22.4	-24.0	-24.1	n.d.	n.d.	n.d.	n.d.	n.d.	-25.8	n.d.	-24.3	-23.9	-24.5	-22.7	-26.3

SB	Apr. 07	Cty	-17.9	-23.9	n.d.	n.d.	-24.6	-24.0	-27.0	n.d.	n.d.	n.d.	n.d.	n.d.	-23.9	n.d.	n.d.	-23.1	-24.9	-24.9	n.d.
SB	Apr. 07	Sel	-22.4	-22.3	-26.6	-23.6	-24.5	-25.5	-24.9	-32.7	-32.4	-30.5	-29.1	-26.0	-26.4	-25.3	-26.3	-25.6	-24.8	-23.1	-26.7
SB	Apr. 07	Tlo	-23.6	-23.2	-21.7	n.d.	-22.0	-22.3	-22.1	n.d.	n.d.	n.d.	n.d.	n.d.	-24.2	n.d.	-24.2	-23.7	-23.6	-22.2	-23.4

Appendix 2 continued.

Site	Date	Taxon	14:0	16:0	16:1 (n-7)	16:2 (n-4)	18:0	18:1 (n-7)	18:1 (n-9)	18:2 (n-6)	18:3 (n-3)	18:4 (n-3)	20:4 (n-3)	20:4 (n-6)	20:5 (n-3)	22:4 (n-6)	22:5 (n-3)	22:6 (n-3)	*Total FA	*Bacterial FA	*Other FA
SB	Apr. 07	Zoe	-21.7	-22.0	-21.3	n.d.	-21.4	n.d.	-22.6	n.d.	n.d.	n.d.	n.d.	n.d.	-22.7	n.d.	n.d.	-22.8	-22.2	-21.0	-23.0
SB	May 07	Apa	-23.2	-24.5	-22.3	n.d.	-23.7	-20.5	n.d.	-37.3	n.d.	n.d.	-39.9	-26.2	-24.5	n.d.	-17.8	-21.7	-23.2	-20.4	-25.9
SB	May 07	Cfi	-16.4	-21.8	n.d.	n.d.	-21.2	n.d.	-23.8	n.d.	n.d.	n.d.	n.d.	n.d.	-21.9	n.d.	n.d.	-20.1	-21.8	-20.2	n.d.
SB	May 07	Che	-22.4	-22.4	-19.9	-22.5	-23.2	-21.6	-23.9	-26.5	-23.5	-24.9	-24.0	-23.1	-23.5	-22.2	-22.5	-21.6	-22.1	-18.0	n.d.
SB	May 07	Tlo	-21.0	-21.0	-24.5	n.d.	n.d.	-23.1	n.d.	n.d.	n.d.	n.d.	n.d.	-29.2	-24.3	n.d.	-20.1	-19.9	-21.9	-19.7	-26.7
SB	May 07	Zoe	-21.1	-21.6	-23.5	n.d.	-23.0	-22.6	n.d.	-31.5	n.d.	n.d.	-31.6	-27.6	-22.0	n.d.	-30.6	-22.5	-22.5	-22.7	-28.0
SB	Sep. 07	Car	-25.3	-27.2	-21.2	-28.3	-27.8	-23.4	-25.5	-27.7	-32.5	-31.8	-30.3	-25.0	-28.5	-22.8	-27.5	-27.3	-27.2	-21.8	-28.1
SB	Sep. 07	Zoe	-17.3	-19.9	n.d.	-21.1	-20.1	-20.8	-21.3	-20.8	-24.6	-22.1	-23.6	n.d.	-21.3	-23.3	-24.4	-23.9	-21.2	-19.8	-20.4
SB	Oct. 07	Che	-25.9	-23.7	-23.9	-25.0	-25.3	-24.6	-26.2	-28.6	-28.0	-27.3	-28.8	n.d.	-25.9	-25.7	-22.8	-24.0	-24.4	-21.8	-24.6
SB	Oct. 07	Cty	-19.4	-21.4	-16.1	-23.9	-22.4	-21.9	n.d.	-22.6	n.d.	-21.6	n.d.	n.d.	-22.5	n.d.	-23.2	-21.1	-21.5	-20.9	-22.2
SB	Oct. 07	Tlo	-21.2	-21.3	-17.9	n.d.	-18.7	-18.9	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-23.1	n.d.	n.d.	-21.7	-21.7	-18.9	n.d.
SB	Jan. 08	Sel	-23.4	-24.0	-27.2	-24.4	-24.9	-25.1	-26.7	-27.3	-29.7	-29.4	-26.0	-24.2	-24.8	n.d.	-26.2	-22.8	-24.0	-23.8	-25.5
SB	Apr. 08	Cfi	-23.7	-24.5	-29.5	-32.2	-29.0	-28.3	-29.5	-31.3	n.d.	-29.2	-29.1	n.d.	-27.4	-29.9	-27.6	-26.2	-26.3	-28.1	-28.3
SB	Apr. 08	Che	-23.4	-25.0	-25.6	-25.6	-24.9	-26.4	-25.4	-28.2	-25.6	-26.0	-27.2	-25.3	-27.2	-29.8	-26.6	-28.4	-26.6	-26.4	-26.6
SB	Apr. 08	Pel	-24.5	-24.3	-26.1	-25.0	-24.6	-26.4	-24.4	-27.5	n.d.	-28.3	-27.4	n.d.	-27.1	-27.2	-28.1	-28.2	-26.4	-25.5	-26.2
SB	Apr. 08	Sel	-26.9	-26.3	-29.5	-30.4	-29.1	-30.5	-29.0	-32.8	-33.2	-33.0	-33.5	-29.7	-27.8	-30.2	-29.2	-27.3	-29.2	-28.5	-30.6

