

## Long-finned pilot whale population diversity and structure in Atlantic waters assessed through biogeochemical and genetic markers

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**Table S1.** Fatty acid (FA) methyl ester (FAME) profiles of inner blubber of pilot whales from NWIP, UK and USA. Values are presented as means  $\pm$ SD of fatty acids normalized areas (NA %) for each FA plus summed values for monounsaturated, polyunsaturated and saturated FA (MUFA, PUFA and SFA, respectively) categories. For the monounsaturated acids 18:1, 20:1 and 22:1, the chromatographic area used includes two structural isomers. Predominant sources of fatty acids in predator (in this case, pilot whale) adipose tissue: B: relatively large contributions from both biosynthesis and diet; B?: not fully understood but believed to be relatively large contributions from both biosynthesis and diet; D: all or primarily from direct dietary intake; NFU: not fully understood (Iverson et al. 2004). #FAs used in RDA and LDA analysis; \*FAs selected by LDA forward stepwise method, as the most important to separate animals from different areas. Abbreviations are described in Table 1 in the main text.

	NWIP	UK	USA	OVERALL	SOURCE
14:0 <sup>#</sup>	5.26 $\pm$ 0.87	5.97 $\pm$ 1.13	6.65 $\pm$ 1.17	5.89 $\pm$ 1.16	B
15:0	0.79 $\pm$ 0.13	0.58 $\pm$ 0.10	0.56 $\pm$ 0.06	0.64 $\pm$ 0.15	B
16:0 <sup>#*</sup>	14.07 $\pm$ 2.18	12.15 $\pm$ 1.87	11.86 $\pm$ 1.35	12.7 $\pm$ 2.08	B
16:1(n-7) <sup>#*</sup>	9.93 $\pm$ 3.76	6.48 $\pm$ 3.25	10.74 $\pm$ 4.37	8.50 $\pm$ 4.08	B
16:2(n-6) <sup>#*</sup>	0.59 $\pm$ 0.14	0.74 $\pm$ 0.16	0.36 $\pm$ 0.06	0.61 $\pm$ 0.20	D
16:3 (n-6)	1.09 $\pm$ 0.18	0.62 $\pm$ 0.16	0.49 $\pm$ 0.13	0.75 $\pm$ 0.29	D
16:4 (n-3)	0.05 $\pm$ 0.02	0.09 $\pm$ 0.04	0.18 $\pm$ 0.08	0.09 $\pm$ 0.07	D
18:0 <sup>#</sup>	4.30 $\pm$ 1.05	3.14 $\pm$ 0.63	2.25 $\pm$ 0.50	3.32 $\pm$ 1.07	B
18:1 <sup>#*</sup>	32.31 $\pm$ 4.58	28.44 $\pm$ 5.39	23.77 $\pm$ 4.57	28.68 $\pm$ 5.79	B
18:2(n-6) <sup>#*</sup>	1.34 $\pm$ 0.16	1.33 $\pm$ 0.28	1.48 $\pm$ 0.20	1.36 $\pm$ 0.24	D
18:3(n-6)	0.09 $\pm$ 0.04	0.18 $\pm$ 0.06	0.13 $\pm$ 0.04	0.14 $\pm$ 0.06	D
18:3(n-3)	0.46 $\pm$ 0.10	0.58 $\pm$ 0.27	0.70 $\pm$ 0.11	0.56 $\pm$ 0.22	D
18:4(n-3) <sup>#*</sup>	0.21 $\pm$ 0.08	0.57 $\pm$ 0.37	0.68 $\pm$ 0.18	0.48 $\pm$ 0.33	D
20:0	0.40 $\pm$ 0.13	0.28 $\pm$ 0.08	0.19 $\pm$ 0.08	0.30 $\pm$ 0.13	B
20:1	5.09 $\pm$ 1.07	11.00 $\pm$ 1.81	10.68 $\pm$ 2.31	9.03 $\pm$ 3.23	D
20:4(n-6) <sup>#*</sup>	1.46 $\pm$ 0.54	0.63 $\pm$ 0.13	0.69 $\pm$ 0.18	0.91 $\pm$ 0.50	D
20:4(n-3)	0.43 $\pm$ 0.11	0.60 $\pm$ 0.22	0.63 $\pm$ 0.20	0.55 $\pm$ 0.20	D
20:5(n-3) <sup>#*</sup>	2.59 $\pm$ 1.50	1.26 $\pm$ 0.65	2.88 $\pm$ 1.28	2.03 $\pm$ 1.33	D
22:0	0.10 $\pm$ 0.05	0.08 $\pm$ 0.04	0.03 $\pm$ 0.03	0.07 $\pm$ 0.05	B?
22:1 <sup>#</sup>	2.30 $\pm$ 0.84	12.70 $\pm$ 4.92	10.99 $\pm$ 6.17	8.99 $\pm$ 6.39	D
21:5(n-3)	0.21 $\pm$ 0.07	0.27 $\pm$ 0.11	0.31 $\pm$ 0.10	0.26 $\pm$ 0.10	B
22:5(n-3)	3.91 $\pm$ 1.82	2.60 $\pm$ 0.90	3.06 $\pm$ 0.97	3.12 $\pm$ 1.38	D
22:6(n-3) <sup>#</sup>	10.91 $\pm$ 4.90	8.08 $\pm$ 3.30	9.17 $\pm$ 3.85	9.22 $\pm$ 4.11	D
24:1(n-9)	0.41 $\pm$ 0.21	0.63 $\pm$ 0.23	0.37 $\pm$ 0.18	0.51 $\pm$ 0.24	NFU
SFA	24.91 $\pm$ 2.90	22.18 $\pm$ 1.90	21.56 $\pm$ 1.57	22.92 $\pm$ 2.59	
MUFA	50.03 $\pm$ 7.69	59.26 $\pm$ 5.01	56.57 $\pm$ 5.85	55.72 $\pm$ 7.29	
PUFA	24.49 $\pm$ 8.61	18.03 $\pm$ 4.88	21.17 $\pm$ 6.24	20.78 $\pm$ 7.04	

**Table S2.** Standardized and structured coefficients for Linear Discriminant Analysis (LDA) after forward selection ( $\alpha = 0.05$ ) for the inclusion of FA in the model.

	STANDARDIZED		STRUCTURED	
	LDA1	LDA2	LDA1	LDA2
16:0	-0.87	0.51	-0.49	0.02
16:1(N-7)	-0.47	0.30	-0.19	0.50
16:2(N-6)	0.15	-0.84	-0.05	-0.85
18:1	-0.46	-0.67	-0.51	-0.28
18:2(N-6)	-0.13	0.73	0.12	0.27
18:4(N-3)	-0.47	-1.07	0.62	0.04
20:4(N-6)	-2.11	-0.67	-0.80	0.19
20:5(N-3)	1.40	0.77	-0.23	0.59