

Table S1. General linear modelling results for proportions (percentage of fatty acid profile) of omega-6 ($\omega 6$) fatty acids, omega-3 ($\omega 3$) fatty acids, arachidonic acid and docosahexaenoic acid (DHA) proportions for juvenile and adult Atlantic cod and adult Atlantic redfish collected from sea cage sites and reference sites, and juvenile cod reared in the laboratory on an aquafeed diet or squid diet. Initial models contained group (G), length (L), species (S) and their interactions (G \times L, G \times S, S \times L and G \times L \times S). Non-significant covariates ($p \geq 0.05$) were removed sequentially to provide the best-fit model.

Model	Fixed effects	df	N	F	p
$\omega 6$					
Laboratory cod	Group	1, 12	14	35.12	<0.001
Juvenile cod	Group	1, 57	59	10.09	<0.01
Adult cod	Group	1, 21	23	1.25	0.28
Atlantic redfish	Group	1, 25	27	3.72	0.07
$\omega 3$					
Laboratory cod	Group	1, 12	14	29.42	<0.001
Juvenile cod	Group	1, 57	59	1.55	0.22
Adult cod	Group	1, 21	23	0.07	0.35
Atlantic redfish	Group	1, 25	27	20.49	<0.001
Arachidonic acid (20:4$\omega 6$)					
Laboratory cod	Group	1, 12	14	4.65	0.05
Juvenile cod	Group	2, 56	59	0.03	0.87
	Length			7.05	0.01
Adult cod	Group	1, 21	23	4.17	0.05
Atlantic redfish	Group	1, 25	27	16.21	<0.001
DHA (20:4$\omega 6$)					
Laboratory cod	Group	1, 12	14	21.56	<0.001
Juvenile cod	Group	3, 55	59	47.84	<0.001
	Length			0.37	0.55
	G \times L			8.44	<0.01
Adult cod	Group	1, 21	23	1.97	0.18
Atlantic redfish	Group	1, 25	27	3.64	0.07

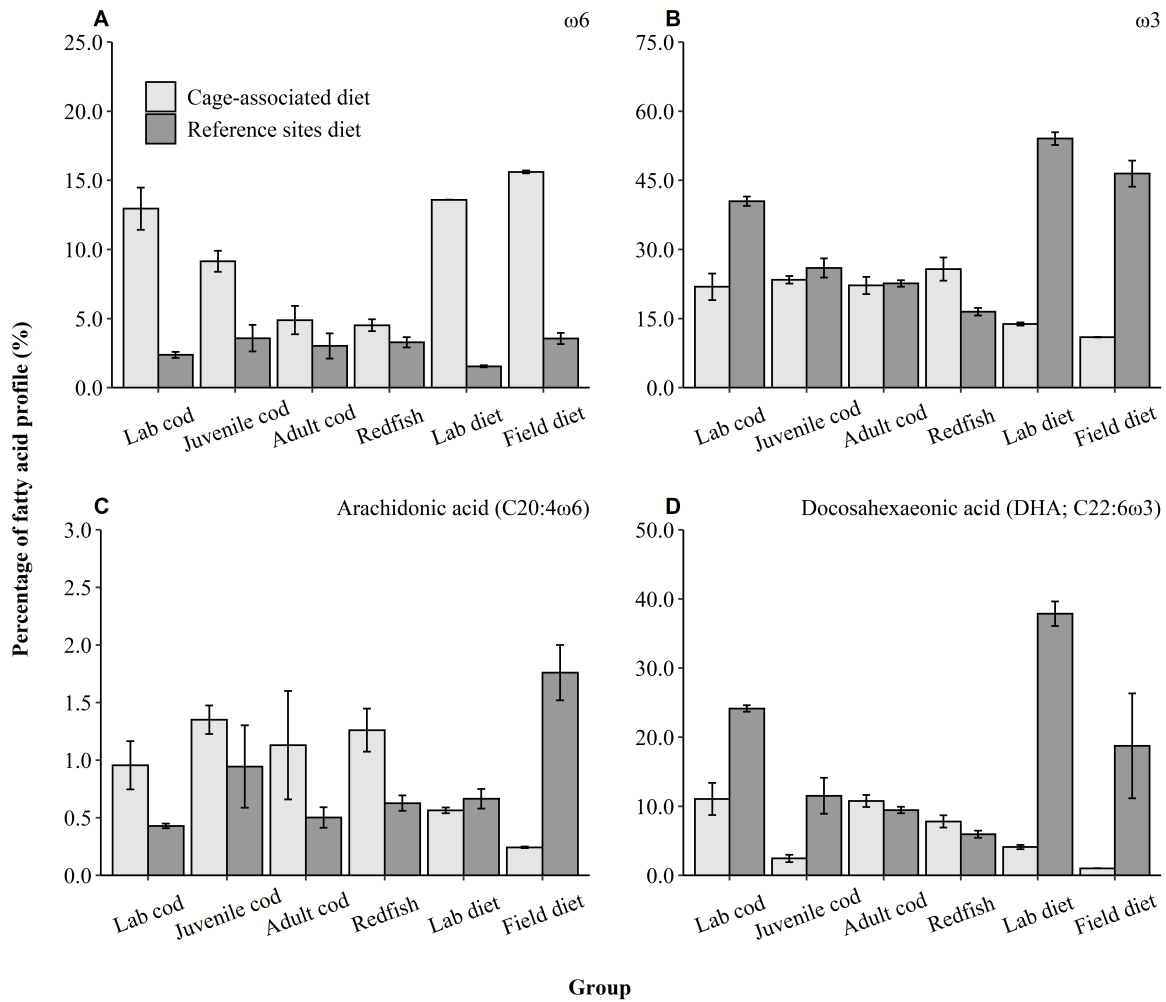


Figure S1. Mean (\pm SE) liver proportions of (A) $\omega 6$ fatty acids, (B) $\omega 3$ fatty acids, (C) arachidonic acid and (D) docosahexaenoic acid (DHA) expressed as percentage of fatty acid profiles for laboratory cod (*Lab cod*) fed either an aquafeed diet or squid diet (*Lab diet*), juvenile Atlantic cod (*Juvenile cod*), adult Atlantic cod (*Adult cod*) and redfish (*Redfish*) collected from sea cage sites and reference sites. Fatty acid values of sampled sea cage aquafeed and literature prey values: N. Shortfin squid (Kirsch et al. 1998), blue mussel (Copeman & Parrish 2004) and copepod sp. (Parrish et al. 2012) are included (*Field diet*)