

Supplementary table 1. Average concentration of select organic nutrients (ww) in raw and food processed tissues of spotted seals (pooled, n=5) and sheefish (pooled, n=8) harvested in Kotzebue, Alaska (2004–2005)^b.

	Total Fat g/100g	Saturated Fat g/100g	cis-MUFA ^c g/100g	cis-PUFA ^c g/100g	trans-FA ^c g/100g	Omega-3 PUFA ^c g/100g	Omega-6 PUFA ^c g/100g	Omega-6 PUFA: Omega-3 PUFA ^c	Cholesterol mg/100g	Vitamin A µg/100g	Vitamin C µg/100g
Spotted Seal											
Raw Blubber	75.5	12.8	40.9	15.8	2.59	13.8	2.05	0.15:1	48.0	1030	<0.05
Rendered Blubber	81.2	14.8	47.6	12.5	2.79	10.6	1.82	0.17:1	46.0	377	<0.05
Raw Muscle	3.48	0.915	2.15	0.177	0.083	0.115	0.062	0.54:1	60.0	2	<0.05
Boiled Muscle	1.84	0.496	1.03	0.189	0.046	0.137	0.053	0.39:1	86.0	<1	<0.05
Dried Muscle	4.47	1.16	2.60	0.410	0.102	0.279	0.130	0.47:1	185	<1	0.5
Raw Liver	3.45	0.982	1.19	1.06	0.071	0.698	0.366	0.52:1	291	274000	0.7
Fried Liver	4.36	1.46	1.47	1.16	0.089	0.724	0.438	0.60:1	487	31500	0.9
Raw Kidney	3.16	0.846	1.63	0.492	0.058	0.224	0.268	1.20:1	447	406	0.8
Boiled Kidney	4.31	1.25	2.26	0.540	0.075	0.188	0.352	1.96:1	720	18.0	0.5
Sheefish Muscle											
Raw	2.91	0.584	1.36	0.769	0.073	0.712	0.057	0.08:1	53	7	<0.05
Baked without Skin	2.30	0.474	0.997	0.674	0.052	0.629	0.045	0.07:1	51	8	<0.05
Baked with Skin	8.08	1.58	4.58	1.49	0.088	1.34	0.146	0.11:1	60	12	<0.05
Dried without Skin	6.02	1.24	2.84	1.48	0.187	1.38	0.112	0.08:1	98	15	<0.05
Dried with Skin	9.06	1.85	4.82	1.90	0.105	1.72	0.177	0.10:1	96	19	0.05
Smoked without Skin	3.40	0.687	1.52	0.977	0.066	0.905	0.072	0.08:1	59	17	<0.05
Smoked with Skin	5.85	1.09	3.05	1.41	0.061	1.29	0.119	0.15:1	57	18	<0.05

^aNutrients were analysed in pooled homogenates that contained approximately equal masses of individual samples from each animal.^bBeta carotene was below the analytical detection limit (BDL) in all tissues.^cMUFA = monounsaturated fatty acid. FA = fatty acid. PUFA = polyunsaturated fatty acid.

Supplementary table II. Mean (\pm 1 SD), median and range of organic contaminants (ng/g ww) in various raw and food processed tissues of spotted seals (n=5) harvested in Kotzebue, Alaska (2004).

Contaminant	MDL ^a	Blubber Raw	Blubber Rendered	Muscle Raw	Muscle Boiled	Muscle Dried	Liver Raw	Liver Fried	Kidney Raw	Kidney Boiled
Hexachlorobutadiene	0.001/0.012	0.092 (\pm 0.074) ^c 0.066 0.012-0.184	0.117 (\pm 0.070) 0.133 0.012-0.185	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b
Tetrachloroveratrole	0.003/0.029	0.329 (\pm 0.323) ^c 0.234 0.038-0.875	1.45 (\pm 1.08) 1.47 0.374-2.77	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b	BDL ^b
Dieldrin	0.024/0.236	32.6 (\pm 19.1) 25.0 14.5-59.1	33.5 (\pm 18.8) 21.8 18.9-59.1	0.984 (\pm 1.343) 0.363 0.170-3.35	0.443 (\pm 0.304) 0.396 0.084-0.829	1.98 (\pm 2.23) 1.29 0.331-5.83	1.44 (\pm 0.28) 1.51 0.992-1.71	1.66 (\pm 0.37) 1.69 1.12-2.02	0.508 (\pm 0.226) 0.365 0.315-0.765	1.56 (\pm 1.39) 1.30 0.344-8.35
Octachlorostyrene	<0.001	1.09 (\pm 0.38) 0.871 0.793-1.55	1.24 (\pm 0.29) 1.18 0.966-1.73	0.027 (\pm 0.023) 0.015 0.009-0.060	0.019 (\pm 0.011) 0.020 0.007-0.032	0.054 (\pm 0.037) 0.033 0.023-0.106	0.125 (\pm 0.032) 0.120 0.089-0.170	BDL ^b	0.069 (\pm 0.062) ^c 0.063 0.001-0.168	0.034 (\pm 0.024) ^c 0.041 0.001-0.056
Pentachloroanisole	<0.001	0.040 (\pm 0.037) ^c 0.057 0.001-0.075	BDL ^b	BDL ^b	BDL ^b	0.036 (\pm 0.008) 0.037 0.028-0.049	BDL ^b	BDL ^b	BDL ^b	BDL ^b
Mirex	<0.001	5.79 (\pm 3.61) 4.92 1.43-11.0	4.87 (\pm 2.31) 3.74 3.26-8.86	0.096 (\pm 0.057) 0.070 0.045-0.169	0.038 (\pm 0.031) ^c 0.046 0.001-0.067	0.161 (\pm 0.076) 0.178 0.059-0.255	0.201 (\pm 0.069) 0.214 0.104-0.293	0.195 (\pm 0.085) 0.252 0.102-0.266	0.037 (\pm 0.011) 0.034 0.021-0.048	0.066 (\pm 0.100) ^c 0.025 0.001-0.243
Σ PCB	3.3/32	298 (\pm 110) 256 201-446	290 (\pm 90) 293 183-395	11.4 (\pm 5.9) 10.6 5.88-21.3	10.5 (\pm 5.7) 11.1 5.26-19.1	16.1 (\pm 9.1) 12.5 6.49-30.1	33.0 (\pm 6.3) 32.2 26.8-42.6	38.9 (\pm 11.1) 36.7 26.3-51.3	18.0 (\pm 9.2) 14.7 11.6-34.1	16.2 (\pm 11.7) 11.7 7.38-36.5
Σ PCB ₁₀	1.2/12	127 (\pm 49) 107 83.3-185	132 (\pm 47) 141 71.1-178	3.98 (\pm 2.62) 2.78 2.09-8.30	2.78 (\pm 1.11) 3.19 1.60-4.15	6.47 (\pm 3.56) 4.97 2.58-11.8	8.75 (\pm 1.95) 8.68 6.50-10.8	8.63 (\pm 2.35) 7.65 6.23-11.2	4.04 (\pm 1.86) 3.74 2.29-7.04	5.13 (\pm 4.39) 3.36 2.72-13.0
Σ DDT	0.23/2.25	119 (\pm 53) 124 67.2-192	106 (\pm 66) 114 8.11-169	2.27 (\pm 2.88) 0.654 0.646-7.30	1.19 (\pm 0.78) 1.18 0.367-1.99	4.56 (\pm 3.73) 2.75 1.21-10.5	5.20 (\pm 1.67) 4.13 3.90-7.53	5.65 (\pm 2.06) 4.76 3.16-7.95	0.783 (\pm 0.281) 0.780 0.440-1.07	3.20 (\pm 4.20) 1.52 0.498-10.7
Σ CHL	0.041/0.40	115 (\pm 65) 94.9 69.9-229	126 (\pm 54) 103 85.1-214	2.56 (\pm 2.74) 1.17 0.809-7.29	1.29 (\pm 0.99) 1.71 0.123-2.43	5.56 (\pm 4.39) 3.67 1.67-12.5	3.76 (\pm 0.57) 3.67 2.99-4.56	3.84 (\pm 1.37) 4.23 1.95-5.11	1.17 (\pm 0.21) 1.11 0.913-1.44	3.57 (\pm 5.39) 1.44 0.352-13.2
Σ HCH	0.012/0.119	89.7 (\pm 34.6) 83.8 54.0-146	92.0 (\pm 39.2) 95.2 51.2-140	2.96 (\pm 2.63) 3.19 0.612-7.08	0.754 (\pm 0.643) 0.979 0.020-1.42	5.09 (\pm 5.11) 2.49 1.74-14.0	1.62 (\pm 0.54) 1.36 1.22-2.52	1.57 (\pm 0.66) 1.48 0.69-2.34	0.672 (\pm 0.164) 0.732 0.446-0.859	1.91 (\pm 2.57) 0.856 0.320-6.45
Σ CBZ	0.003/0.30	12.6 (\pm 2.3) 12.1 10.8-16.5	15.3 (\pm 2.8) 14.5 12.3-18.9	0.691 (\pm 0.417) 0.978 0.225-1.03	0.370 (\pm 0.214) 0.381 0.155-0.624	0.912 (\pm 0.509) 0.660 0.462-1.68	1.15 (\pm 0.29) 1.06 0.810-1.59	1.28 (\pm 0.23) 1.26 0.986-1.57	0.659 (\pm 0.161) 0.727 0.425-0.823	1.14 (\pm 0.77) 0.831 0.697-2.52
Σ PBDE	0.22/1.73	4.75 (\pm 1.56) 3.82 3.52-6.82	3.95 (\pm 1.29) 4.04 2.70-5.98	0.415 (\pm 0.062) 0.401 0.351-0.518	0.300 (\pm 0.110) 0.343 0.22-0.373	0.346 (\pm 0.62) 0.336 0.271-0.442	0.806 (\pm 0.311) 0.649 0.517-1.17	0.601 (\pm 0.142) 0.650 0.350-0.696	0.529 (\pm 0.101) 0.518 0.398-0.682	0.364 (\pm 0.136) 0.320 0.265-0.603

^aMDL = Minimum detection limit (ng/g ww). The first MDL reported applies to muscle, liver and kidney samples and the second to blubber samples. If only one MDL is reported, that MDL applies to all tissues for that analyte.

^bBDL = Below Detection Limit. Summary statistics were not calculated for compounds with \geq 50% of samples BDL.

^c1 or 2 out of 5 samples were BDL. A value of $\frac{1}{2}$ MDL (MDL=0.001 ng/g) was used for these samples to calculate summary statistics.

Supplementary table III. Mean (\pm 1 SD), median and range of organic contaminants (ng/g ww) in raw and food processed muscle of sheefish (n=8) harvested in Kotzebue, Alaska (2005).

Contaminant	MDL ^a	Raw	Baked Without Skin	Baked With Skin	Dried Without Skin	Dried With Skin	Smoked Without Skin	Smoked With Skin
Hexachlorobutadiene	0.001	BDL ^b	0.008 (\pm 0.006) ^c 0.008 0.001-0.016	BDL ^b	0.015 (\pm 0.007) ^c 0.015 0.001-0.023	0.010 (\pm 0.005) ^c 0.010 0.001-0.017	0.011 (\pm 0.008) ^c 0.009 0.001-0.026	0.012 (\pm 0.009) ^c 0.015 0.001-0.024
Tetrachloroveratrole	0.001	0.047 (\pm 0.046) 0.035 0.006-0.149	0.033 (\pm 0.035) ^c 0.026 0.001-0.109	0.061 (\pm 0.027) 0.075 0.019-0.086	0.073 (\pm 0.029) 0.080 0.015-0.114	0.060 (\pm 0.033) 0.042 0.022-0.112	0.052 (\pm 0.052) 0.041 0.011-0.177	0.053 (\pm 0.020) 0.051 0.025-0.083
Dieldrin	0.011	0.270 (\pm 192) 0.242 0.043-0.595	0.120 (\pm 0.104) ^c 0.113 0.011-0.284	0.257 (\pm 0.212) ^c 0.288 0.011-0.505	0.431 (\pm 0.179) 0.434 0.080-0.649	0.401 (\pm 0.205) 0.369 0.163-0.768	0.254 (\pm 0.188) 0.208 0.062-0.629	0.415 (\pm 0.170) 0.445 0.108-0.632
Octachlorostyrene	<0.001	0.063 (\pm 0.056) 0.044 0.011-0.174	0.056 (\pm 0.028) 0.048 0.022-0.097	0.081 (\pm 0.035) 0.078 0.033-0.135	0.177 (\pm 0.128) 0.142 0.025-0.410	0.113 (\pm 0.89) ^c 0.092 0.001-0.282	0.072 (\pm 0.035) 0.063 0.025-0.134	0.129 (\pm 0.051) 0.128 0.045-0.205
Pentachloroanisole	<0.001	BDL ^b	0.014 (\pm 0.010) ^c 0.010 0.001-0.032	0.010 (\pm 0.010) ^c 0.007 0.001-0.025	BDL ^b	BDL ^b	BDL ^b	BDL ^b
Mirex	<0.001	0.061 (\pm 0.056) 0.044 0.020-0.186	0.042 (\pm 0.019) 0.038 0.019-0.070	0.070 (\pm 0.038) 0.062 0.024-0.133	0.134 (\pm 0.096) 0.109 0.023-0.303	0.103 (\pm 0.061) 0.082 0.043-0.211	0.057 (\pm 0.031) 0.046 0.016-0.104	0.103 (\pm 0.044) 0.092 0.037-0.164
Σ PCB	1.44	9.54 (\pm 6.74) 7.45 3.22-23.6	6.01 (\pm 3.98) 5.19 1.86-14.6	9.09 (\pm 4.01) 9.68 3.29-14.9	16.7 (\pm 11.9) 14.4 1.72-34.5	12.4 (\pm 6.0) 11.6 5.73-22.0	8.95 (\pm 4.56) 8.49 3.58-14.3	11.0 (\pm 4.7) 10.4 4.05-16.4
Σ PCB ₁₀	0.53	2.39 (\pm 1.80) 1.58 0.859-6.15	1.46 (\pm 0.88) 1.33 0.53-2.95	2.61 (\pm 1.20) 2.80 0.914-4.45	4.83 (\pm 3.47) 4.12 0.53-10.1	3.94 (\pm 2.00) 3.49 1.78-7.34	2.56 (\pm 1.19) 2.59 0.927-4.09	3.40 (\pm 1.44) 3.16 1.33-5.10
Σ DDT	0.10	1.56 (\pm 1.45) 0.971 0.406-4.51	0.778 (\pm 0.417) 0.833 0.113-1.35	1.46 (\pm 0.93) 1.39 0.10-3.05	3.25 (\pm 2.26) 2.57 0.510-6.97	2.56 (\pm 1.42) 2.19 0.940-4.90	1.29 (\pm 0.64) 1.16 0.455-2.23	2.56 (\pm 1.14) 2.35 0.874-4.12
Σ CHL	0.02	1.99 (\pm 1.62) 1.52 0.445-4.66	1.44 (\pm 1.30) 1.08 0.327-4.48	2.03 (\pm 1.12) 1.92 0.266-3.76	4.06 (\pm 2.19) 3.61 0.740-7.27	3.33 (\pm 1.59) 3.14 1.62-5.94	1.76 (\pm 0.93) 1.46 0.749-3.30	3.31 (\pm 1.35) 3.34 1.31-5.13
Σ HCH	0.01	0.397 (\pm 0.232) 0.438 0.058-0.752	0.317 (\pm 0.204) 0.238 0.071-0.591	0.627 (\pm 0.389) 0.735 0.092-1.07	0.797 (\pm 0.399) 0.700 0.111-1.25	0.907 (\pm 0.614) 0.844 0.183-1.88	0.454 (\pm 0.362) 0.409 0.078-1.19	0.694 (\pm 0.278) 0.752 0.239-1.06
Σ CBZ	0.001	2.15 (\pm 1.15) 2.33 0.381-3.95	1.64 (\pm 0.90) 1.47 0.504-2.86	1.81 (\pm 1.09) 1.53 0.315-3.31	3.87 (\pm 1.58) 4.02 0.692-5.54	2.03 (\pm 1.05) 1.77 0.945-4.32	2.15 (\pm 1.40) 1.95 0.790-5.00	2.20 (\pm 0.79) 2.39 0.519-3.01

^aMDL = Minimum detection limit (ng/g ww).^bBDL = Below Detection Limit. Summary statistics were not calculated for compounds with \geq 50% of samples BDL.^c1 to 3 out of 8 samples were BDL. A value of $\frac{1}{2}$ MDL (MDL=0.001 ng/g) was used for these samples to calculate summary statistics.