PERSISTENT ORGANIC POLLUTANTS IN THE LIVERS OF MOOSE HARVESTED IN THE SOUTHERN NORTHWEST TERRITORIES, CANADA

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ANALYTICAL METHODS

PCBs, OCOs, and BFRs

Samples were thawed and thoroughly homogenized in a small stainless steel blender. Subsamples (3.5 to 5 g ww) were Soxhlet-extracted with dichloromethane; all were spiked with 1,3,5-tribromobenzene (TrBB) prior to extraction. Recovery of brominated compounds was monitored using BDE-71, d16-gHBCD, and C13-BDE-209. $^{13}C_{12}$-PCB-133 was added as a recovery standard for GPC performance for samples analyzed by ALS Global. A laboratory blank consisting of all reagents and 2 NIST reference materials (cod liver SRM 1588b and fish muscle SRM 1946) were also analyzed with the 14 samples. The extracts were then rotary evaporated under vacuum, exchanged into DCM: hexane (1:1) and applied to a gel permeation chromatography (GPC) column (60 g Biobeads SX3) to remove lipids and other biogenic materials. The GPC eluate was reduced to 1 mL under vacuum. Percent lipid was determined gravimetrically on a subsample of the extract or by evaporating the first GPC fraction.

Extracts were cleaned up on a silica gel column. NLET utilized activated silica gel (8 g, 1.1 cm i.d. column), and eluted with hexane followed by *n*-hexane/DCM (1:1) to separate PCBs from most of the PBDEs and OCPs. BDE-209 was quantitatively eluted in the silica Fraction 1.

The ALS Global split the GPC elution into separate OCP/OCO fractions that were chromatographed on a 2% deactivated silica gel column and then reduced to 0.05 mL for analysis. The PCB fraction was cleaned up on an acid-silica gel column (45% w/w H2SO4 on Silica Gel topped with neutral Silica Gel) then reduced to 0.04 mL for anlaysis.

GC-ECD analysis was conducted on 7 Dehcho samples using a GC-ECD (Agilent 6890 gas chromatograph with a ^{63}Ni-electron capture detector [ECD]) using a 30 m x 0.25 mm (i.d.) DB-5 column (internal film thickness 0.25 mm; J&W Scientific, Folsom, California, USA) with H_2 carrier gas (constant flow rate 0.91 mL min^{-1}). Ultra-pure N_2 was used as the makeup gas for the ECD (detector temperature: 325 C). The GC-ECD quantification of OCs in each sample was performed using a 4-point external standard calibration curve. Calibration standards were quantified after every 10 samples.

Toxaphene-related compounds, including 22 polychlorinated bornane congeners as well as α- and β-endosulfan and endosulfan sulfate, were quantified by GC-electron capture-negative ion mode (ECNI) mass spectrometry using an Agilent 6890 GC-5975

MS system as described by Hoekstra et al. (2002). Toxaphene and homologues were quantified using a "Hercules" technical standard as described by Glassmeyer et al. (1999). Individual polychlorinated bornane congeners were quantified using a series of external calibration standards (Dr. Ehrenstofer, Augsburg, Germany). Alpha- and beta-endosulfan, and endosulfan sulfate were quantified by external standards using the characteristic fragment ions m/z 406 and m/z 273.

Analyses of all PBDEs and other brominated flame retardants (BFRs) was carried out by GC-ECNIMS on an Agilent 6890-5975 MS using an HP5-MS capillary column (30 m x 0.25 mm x 0.25 um film thickness). Helium was the carrier gas, and separation was performed at a constant flow of 1.2 mL/min (Muir et al. 2006). The mass spectrometer was operated in the NCI mode, methane was the buffer gas, and temperature was 106, 150, and 300 °C for the quadrupole, the ion source, and the interface, respectively. The analytes were monitored at m/z 79/81 using an external standard calibration, except for C13-BDE-209 which was monitored at m/z 493/495 and native BDE-209 at m/z 487/485. Any β- and γ-HBCDD residues in the samples were most likely thermally isomerized to α-HBCDD in the GC injection port, thus, results represent total HBCDD (Muir et al. 2006).

PFASs

An internal standard mixture of ^{13}C-PFASs was added to every sample and extracted by shaking twice with acetonitrile. The extract was evaporated under nitrogen to dryness and reconstituted with 1 mL of methanol. The extract was cleaned with a graphite carbon solid phase cartridge (Supelco). Cleaned up extracts were analyzed for PFCAs as well as PFSAs. The analyses were performed by liquid chromatography with negative electrospray tandem mass spectrometry (LC-MS/MS). Analytes were detected using an API 4000 Q Trap (Applied Biosystems, Carlsbad, California, USA) after chromatographic separation with an Agilent 1100 LC. Chromatography was performed using an ACE C18 column (50 mm x 2.1 mm, 3 μm particle size; Aberdeen, United Kingdom), preceded by a C18 guard column (4.0 x 2.0 mm, Phenomenex) and the column oven was set to 30 °C. Samples were quantified with a 6 point calibration curve and isotopic dilution method.

QUALITY ASSURANCE

Recoveries of internal standards ranged from 79% for δ-HCH to 120% for PCB-204 (Table S4) in Dehcho samples analysed by GC-ECD, and from 59% for endrin ketone to 138% for 1245-TTBB in samples analysed by GC-HRMS/LRMS. A recovery spike demonstrated good recoveries of 32 OCP/OCOs (55-101%) and 18 PBDE/BFRs (71–133%) (Table S5). Slight losses of more volatile compounds (e.g., hexachlorobutadiene) and recovery enhancement due to contribution from laboratory reagent blanks (BDE 47) explain the recovery variation. No corrections for recovery were made based on this information. Analysis of the reference materials (NIST SRMs 1588b and 1946) showed good agreement with all analytes quantified to within ±25% of certified values of OCP/OCOs (17 compounds) and PCBs (29 congeners).

Table S1. List of moose samples, collection year, age, sex, biological characteristics, harvest date and location.

Region	ID	Age	Sex	Condition E/G/F[1]	Hunter est. age	Date Harvested	Latitude °N	Longitude °W
South Slave	SSR-MO-11-4	<1	M	F	Calf	20-Feb-10	60.21	112.13
	SSR-MO-11-7	1	M	E	Adult	10-Jan-10	60.64	112.27
	SSR-MO-11-8	4	M	n/a	Adult	4-Oct-10	60.76	112.19
	SSR-MO-11-9	4	M	G	Adult	13-Dec-10	60.79	116.22
	SSR-MO-11-10	<1	M	G	Yearling	30-Sep-10	60.85	114.49
	SSR-MO-11-12	<1	F	G	calf	8-Feb-10	60.78	112.78
	SSR-MO-11-13	9	F	n/a	Adult	8-Feb-10	60.78	112.78
Dehcho	GEN-14	3	M	G	Adult	21-Feb-06	61.55	121.18
	GEN-15	6	F	G	Adult	02-Mar-06	61.64	121.06
	GEN-16	12	F	G	Adult	06-Mar-06	61.60	121.14
	GEN-17	<1	F	G	Calf	06-Mar-06	61.60	121.14
	GEN-18	<1	M	G	Calf	24-Mar-06	61.50	120.62
	GEN-19	2	M	E	Adult	18-Mar-06	61.48	120.62
	JMR-4	5	F	E	Adult	24-Mar-06	61.49	120.64

[1] Hunter condition evaluation. E = excellent, G= good, F = fair. n/a = not available.

Table S2. List of individual organohalogen analytes along with their MDLs (ng/g ww) using either GC with high or low resolution MS, GC-NCIMS, or GC-ECD.

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
OCO	Hexachlorobutadiene		GC-HRMS, GC-ECD	<0.005	0.032
OCO	1,2,4,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	GC-HRMS, GC-ECD	0.099	0.007
OCO	1,2,3,4-Tetrachlorobenzene	1,2,3,4-tetrachlorobenzene	GC-HRMS, GC-ECD	0.108	0.015
OCP	Pentachlorobenzene	pentachlorobenzene	GC-HRMS, GC-ECD	0.077	<0.002
OCO	345-trichloroveratrole		GC-HRMS, GC-ECD	na	0.012
OCP	Pentachloroanisole		GC-HRMS, GC-ECD	<0.008	0.024
OCO	Hexachlorobenzene		GC-HRMS, GC-ECD	<0.026	<0.002
OCO	3,4,5,6-Tetrachloroveratrole	GC-HRMS, GC-ECD	<0.016	<0.011	
OCP	α-HCH	α-hexachlorocyclohexane	GC-HRMS, GC-ECD	<0.059	0.015
OCP	β-HCH	β-hexachlorocyclohexane	GC-HRMS, GC-ECD	<0.1	0.013
OCP	γ-HCH	lindane	GC-HRMS, GC-ECD	<0.075	<0.002
OCP	Heptachlor		GC-HRMS, GC-ECD	<0.018	0.08
OCP	Pentachloronitrobenzene		GC-HRMS, GC-ECD	<0.075	na
OCP	Aldrin		GC-HRMS, GC-ECD	<0.011	0.026
OCP	Dacthal		GC-HRMS, GC-ECD	<0.056	na
OCP	Octachlorostyrene		GC-HRMS, GC-ECD	<0.025	0.016
OCP	HeptachlorEpoxide		GC-HRMS, GC-ECD	<0.069	0.047
OCP	Oxychlordane		GC-HRMS, GC-ECD	<0.019	<0.002
OCP	trans-chlordane		GC-HRMS, GC-ECD	<0.037	0.005
OCP	cis-chlordane		GC-HRMS, GC-ECD	<0.032	0.012
OCP	trans-nonachlor		GC-HRMS, GC-ECD	<0.035	0.062
OCP	Dieldrin		GC-HRMS, GC-ECD	<0.018	0.088
OCP	*cis*-nonachlor		GC-HRMS, GC-ECD	<0.039	0.024
OCP	Endrin		GC-HRMS, GC-ECD	<0.387	0.023

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
OCP	24'-DDE		GC-HRMS, GC-ECD	<0.01	0.001
OCP	44'-DDE		GC-HRMS, GC-ECD	<0.01	0.021
OCP	24'-DDD		GC-HRMS, GC-ECD	<0.01	0.014
OCP	44'-DDD		GC-HRMS, GC-ECD	<0.01	0.02
OCP	24'-DDT		GC-HRMS, GC-ECD	<0.01	0.02
OCP	44'-DDT		GC-HRMS, GC-ECD	<0.01	0.02
OCP	Methoxychlor		GC-HRMS, GC-ECD	<0.01	0.019
OCP	Mirex		GC-HRMS, GC-ECD	0.068	0.01
PCBs	PCB-1	monochlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB-3	monochlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB4/10	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.166
PCBs	PCB7/9	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.158
PCBs	PCB6	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.042
PCBs	PCB8/5	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.078
PCBs	PCB12/13	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	1.11
PCBs	PCB15	dichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.036
PCBs	PCB19	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	<0.002
PCBs	PCB18	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.211
PCBs	PCB17	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB27/24	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.036
PCBs	PCB16/32	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.119
PCBs	PCB26	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.112
PCBs	PCB25	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.019

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
PCBs	PCB31	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.445
PCBs	PCB28	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.05
PCBs	PCB20/33/21	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.155
PCBs	PCB22	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.097
PCBs	PCB37	trichlorobiphenyl	GC-LRMS, GC-ECD	<0.002	
PCBs	PCB53	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.117
PCBs	PCB45	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.136
PCBs	PCB46	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.058
PCBs	PCB73/52	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.913
PCBs	PCB43/49	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.446
PCBs	PCB48/47/75	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	5.152
PCBs	PCB44	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.554
PCBs	PCB59/42	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.21
PCBs	PCB71/41/68/64	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.417
PCBs	PCB100	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.052
PCBs	PCB63	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.024
PCBs	PCB74/61	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.241
PCBs	PCB70/76	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.663
PCBs	PCB80/66	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.375
PCBs	PCB56/60	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.229
PCBs	PCB81	tetrachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.413
PCBs	PCB95/93	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.641
PCBs	PCB91	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.146

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
PCBs	PCB92	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.156
PCBs	PCB84/90/101/89	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.26
PCBs	PCB89-101	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.692
PCBs	PCB99	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.319
PCBs	PCB119	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.022
PCBs	PCB83/108	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.089
PCBs	PCB97	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.172
PCBs	PCB86/111/125/117/87/116/115	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB120/85	pentachlorobiphenyl	GC-LRMS, GC-ECD	0.055	0.092
PCBs	PCB110	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.461
PCBs	PCB136	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.114
PCBs	PCB82	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.049
PCBs	PCB107/109	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.059
PCBs	PCB123	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.406
PCBs	PCB118/106	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.298
PCBs	PCB114	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.024
PCBs	PCB105/127	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.141
PCBs	PCB126	pentachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB151	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.173
PCBs	PCB135/144	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.651
PCBs	PCB139/149	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB131/165/142	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.021
PCBs	PCB146	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.056

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
PCBs	PCB153	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.293
PCBs	PCB132/168	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.135
PCBs	PCB141	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.068
PCBs	PCB137	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	3.971
PCBs	PCB163/164/138	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.283
PCBs	PCB158/160	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.044
PCBs	PCB129	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.018
PCBs	PCB159	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB128	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.028
PCBs	PCB167	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.01
PCBs	PCB156	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.013
PCBs	PCB157	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	<0.001
PCBs	PCB169	hexachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB182/187	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.109
PCBs	PCB183	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.046
PCBs	PCB174/181	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.072
PCBs	PCB177	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.143
PCBs	PCB171	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.042
PCBs	PCB172/192	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.018
PCBs	PCB197	octachloorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.007
PCBs	PCB180	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.087
PCBs	PCB193	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.132
PCBs	PCB191	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	<0.001

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
PCBs	PCB170/190	heptachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.03
PCBs	PCB-202	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	na
PCBs	PCB199	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.008
PCBs	PCB196/203	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.022
PCBs	PCB195	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.015
PCBs	PCB194	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.005
PCBs	PCB205	octachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	<0.001
PCBs	PCB208	nonachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.002
PCBs	PCB207	nonachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	<0.001
PCBs	PCB206	nonachlorobiphenyl	GC-LRMS, GC-ECD	<0.002	0.013
PCBs	PCB209	decachlorobiphenyl	GC-LRMS, GC-ECD	0.08	0.004
Sum op- and pp'-DDT related	ΣDDT				
Sum oxychlordane. C & t-chlordane, c & t-nonachlor, heptachlor, heptachlor epoxide	ΣCHL				
Sum α, β, γ-HCH	ΣHCH				
Sum tetra, PeCBz, HCB	ΣCBz				
Sum α-, β + sulfate	Σendosulfan				
Sum PCBs	ΣPCB				
Sum mono-di CBs	Σmono-di				
Sum tri CBs	Σtri				
Sum tetra cBs	Σtetra				
Sum penta CBs	Σpenta				
Sum hexa CBs	Σhexa				

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
Sum hepta CBs	Σhepta				
Sum octa CBs	Σocta				
Sum nona-deca CBs	Σnona-deca				
Endosulfan	α-Endosulfan			<0.002	
Endosulfan	β-Endosulfan			<0.002	
Endosulfan	Endosulfan sulfate			<0.002	
Perfluorosulfonates	PFBS	Perfluorobutane sulfonate	LC-MS/MS	<0.001	
Perfluorosulfonates	PFHxS	Perfluorohexane sulfonate	LC-MS/MS	<0.001	
Perfluorosulfonates	PFHpS	Perfluoroheptane sulfonate	LC-MS/MS	<0.001	
Perfluorosulfonates	PFOS	Perfluorooctane sulfonate	LC-MS/MS	0.299	
Perfluorosulfonates	PFDS	Perfluorodecane sulfonate	LC-MS/MS	<0.001	
Perfluorosulfonates	PFOSA	Perfluorooctanesulfonamide	LC-MS/MS	<0.001	
Perfluorosulfonates	ΣPFSAs	Sum perfluorosulfonates	LC-MS/MS		
Perfluorocarboxylates	PFHxA	Perfluorohexanoate	LC-MS/MS	0.179	
Perfluorocarboxylates	PFHpA	Perfluoroheptanoate	LC-MS/MS	0.036	
Perfluorocarboxylates	PFOA	Perfluorooctanoate	LC-MS/MS	0.213	
Perfluorocarboxylates	PFNA	Perfluorononanoate	LC-MS/MS	0.046	
Perfluorocarboxylates	PFDA	Perfluorodecanoate	LC-MS/MS	0.256	
Perfluorocarboxylates	PFUnA	Perfluoroundecanoate	LC-MS/MS	0.085	
Perfluorocarboxylates	PFDoA	Perfluoroundodecanoate	LC-MS/MS	0.159	
Perfluorocarboxylates	PFTA	Perfluorotridecanoate	LC-MS/MS	0.089	
Perfluorocarboxylates	PFTrA	Perfluorotetradecanoate	LC-MS/MS	0.131	
Perfluorocarboxylates	ΣPFCAs	Sum perfluorocarboxylates	LC-MS/MS		

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
Toxaphene	Toxaphene	Technical standard	GC-ECNIMS	<0.05	
Toxaphene homologs	Hexa	Technical standard	GC-ECNIMS	<0.05	
Toxaphene homologs	Hepta	Technical standard	GC-ECNIMS	<0.05	
Toxaphene homologs	Octa	Technical standard	GC-ECNIMS	<0.05	
Toxaphene homologs	Nona	Technical standard	GC-ECNIMS	<0.05	
Toxaphene homologs	Deca	Technical standard	GC-ECNIMS	<0.05	
Chlorobornanes[2]	Parlar 11-12		GC-ECNIMS	<0.05	
Chlorobornanes	Parlar 15		GC-ECNIMS	<0.02	
Chlorobornanes	Hex-sed		GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 21	B7-499	GC-ECNIMS	<0.02	
Chlorobornanes	Hep-sed		GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 25		GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 32	B7-515	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 26	B8-1413	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 31		GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 38	B8-789	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 39	B8-531	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 40-41	B8-1414/1945	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 42	B8-806	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 44	B8-2229	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 50	B9-1679	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 51	B8-786	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 56	B9-1046	GC-ECNIMS	<0.02	

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
Chlorobornanes	Parlar 58	B9-715	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 59	B9-1049	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 62	B9-1025	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 63	B9-2206	GC-ECNIMS	<0.02	
Chlorobornanes	Parlar 69	B10-1110	GC-ECNIMS	<0.02	
PBDEs	BDE 17	dibromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 28/33	tribromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 49	tetrabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 47	tetrabromodiphenyl ether	GC-ECNIMS	<0.035	
PBDEs	BDE 66	tetrabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 100	pentabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 99	pentabromodiphenyl ether	GC-ECNIMS	<0.022	
PBDEs	BDE 85	pentabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 154	hexabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 153	hexabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 138	hexabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 183	heptabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 190	heptabromodiphenyl ether	GC-ECNIMS	<0.002	
PBDEs	BDE 209	decabromodiphenyl ether	GC-ECNIMS	<0.558	
Sum PBDEs	ΣPBDEs				
Other BFRs	TBP-AE	Allyl 2,4,6-tribromophenyl ether	GC-ECNIMS	<0.002	
Other BFRs	pTBX	tetrabromoxylene	GC-ECNIMS	<0.002	
Other BFRs	TBP-DBPE	2-Bromoallyl 2,4,6-tribromophenyl ether	GC-ECNIMS	<0.002	

Table S2 continued . . . .

Table S2 continued

Class[1]	Common name	Chemical or other name	Instrumental analysis	MDL[3] GC-MS	MDL GC-ECD
Other BFRs	PBBe	pentabromobenzene	GC-ECNIMS	<0.002	
Other BFRs	TBCT	tetrabromo-o-chlorotoluene	GC-ECNIMS	<0.002	
Other BFRs	PBTo	pentabromotoluene	GC-ECNIMS	<0.002	
Other BFRs	PBEB	pentabromoethylbenzene	GC-ECNIMS	<0.002	
Other BFRs	DPTE/TBP-DBPE	2,3-Dibromopropyl 2,4,6-tribromophenyl ether	GC-ECNIMS	<0.002	
Other BFRs	HBB	hexabromobenzene	GC-ECNIMS	<0.002	
Other BFRs	BB-101	penetabromobiphenyl	GC-ECNIMS	<0.002	
Other BFRs	PBBA	pentabromobenzyl acrylate	GC-ECNIMS	<0.002	
Other BFRs	EHTeBB	2-ethyl-1-hexyl 2,3,4,5-tetrabromobenzoate	GC-ECNIMS	<0.002	
Other BFRs	HBCDD	hexabromocyclododecane	GC-ECNIMS	<0.002	
Other BFRs	BTBPE	bis(tribromophenoxy) ethane	GC-ECNIMS	<0.002	
Other BFRs	BEHTBP	Bis(2-ethyl-1-hexyl) tetrabromophthalate	GC-ECNIMS	<0.002	
OCO	syn-DP	Syn-Dechlorane	GC-ECNIMS	<0.002	
OCO	anti-DP	Anti-Dechlorane	GC-ECNIMS	<0.002	
Other BFRs	OBIND	Octabromotrimethylphenylindane	GC-ECNIMS	<0.002	

[1]OCO= other chlorinated organic, OCP = organochlorine pesticide related, PCB = polychlorinated biphenyl, PBDE = polybrominated diphenyl ether, BFR = brominated flame retardant.
[2]Nomenclature of chlorobornanes based on Andrews and Vetter 1995.
[3]MDL = method detection limit = 3*SD of blank values. "na" = not analysed. Where nondetect values were present in blanks a"<" values were used. These are instrument detection limits based on S/N of approximately 10:1.

Table S3. Comparison of GC-MS and GC-ECD analysis of 3 moose liver samples. See Table S2 for full list analytes represented by each group.

Target Analytes	moose GC-MS GEN-14 ng/g ww	moose ECD Gen-14 ng/g ww	moose GC-MS GEN-15 ng/g ww	moose ECD Gen-15r ng/g ww	moose GC-MS GEN-16 ng/g ww	moose ECD Gen-16 ng/g ww
ΣDDT	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
ΣCHL	0.09	0.02	0.02	0.05	0.02	0.02
ΣHCH	0.11	0.13	0.07	0.11	0.07	0.12
HCB	0.19	0.17	0.24	0.12	0.20	0.15
ΣPCB	0.62	0.30	1.07	0.74	1.03	0.89
smono-di	0.22	0.06	0.44	0.11	0.21	0.13
Σ-tri	0.26	0.13	0.11	0.15	0.11	0.31
Σ-tetra	0.08	0.08	0.33	0.19	0.42	0.27
Σ-penta	0.05	<0.002	0.18	0.17	0.06	0.02
Σ-hexa	0.02	0.01	0.02	0.03	0.02	0.07
Σ-endosulfan	0.01	0.07	0.03	0.04	0.03	0.12

Table S4. Recoveries of internal standards during or prior to sample extraction.

Compound	% recovery GC-ECD analysis (n = 7)	SD	% recovery GC-MS analysis (n = 10)	SD
1,3-DBB	84.7	3.5	85.6	23.9
1,3,5-TBB	80.2	3.8	112	29.2
1,2,4,5-TTBB	87.7	4.3	138	35.3
δ-HCH	79.0	5.2	110	39.3
Endrin Ketone	91.8	5.1	59.4	37.2
PCB 30	108	3.3	94.0	5.1
PCB 204	120	4.4	98.6	3.0
D16-gHBCDD[1]			84.1	17.7
^{13}C-BDE-209[1]			67.4	15.8
^{13}C12-PCB133			82.3	8.0

[1]HBCDD and BDE-209 were determined in n=7 samples by GC-NCIMS following GC-ECD analysis.

Table S5. Recoveries of a OCPs and PBDE standard spike (n = 1) during analysis of the moose liver samples.

Analyte	%	Analyte	%	Analyte	%
PBDE 17	95	Hexachlorobutadiene	55	α-endosulfan	97
PBDE 28/33	101	1,2,4,5-TTCB	70	*cis*-Chlordane	72
PBDE 49	86	1,2,3,4-TTCB	68	Trans-nonachlor	67
PBDE 71	96	PECB	66	Dieldrin	79
PBDE 47	138	3,4,5-trichloroveratrole	87	p,p-DDE	67
PBDE 66	103	α-HCH	63	op-DDD	86
PBDE 100	116	β-HCH	78	Endrin	69
PBDE 99	133	HCB	71	b-Endosulfan	77
PBDE 85	107	3,4,5,6-tetrachloroveratrole	76	*p,p'*-DDD	72
PBDE 154	100	Pentachloroanisole	68	*cis*-nonachlor	60
PBDE 153	104	γ-HCH (Lindane)	67	*o,p'*-DDT	72
PBDE 138	85	Heptachlor	59	*p,p'*-DDT	68
PBDE 183	92	Aldrin	64	Methoxychlor	101
PBDE 190	92	Heptachlor Epoxide	79	Mirex	75
PBDE 209	71	Oxychlordane	81		
HBCDD	73	Octachlorostyrene	62		
BTBPE	78	trans-chlordane	62		
DBDPE	117	o,p'-DDE	72		

Table S6. Arithmetic and geometric mean concentrations of OCP/OCOs and PCBs in moose liver from the Dehcho and South Slave regions of the Northwest Territories (ng/g wet weight and lipid weight; n = 7 for each region). "<" values are instrument detection limits where arithmetic means were <0.001-0.002 ng/g ww.

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
% lipid	6.3	6.2	5.3	7.2					5.7	5.7	5.0	6.5				
Hexachlorobutadiene	0.011	0.010	0.007	0.014	0.17	0.17	0.12	0.24	0.005	0.004	0.003	0.011	0.080	0.074	0.050	0.16
1,2,4,5-Tetrachloro-benzene	0.25	0.24	0.17	0.30	4.35	4.22	2.98	5.50	0.16	0.14	0.08	0.35	2.68	2.52	1.55	5.38
1,2,3,4-Tetrachloro-benzene	0.28	0.27	0.18	0.35	4.85	4.68	3.16	5.87	0.16	0.15	0.09	0.36	2.79	2.64	1.86	5.54
Pentachlorobenzene	0.11	0.037	0.008	0.32	1.85	0.59	0.11	5.91	0.17	0.16	0.10	0.45	3.00	2.74	1.75	6.85
Hexachlorobenzene	0.17	0.17	0.10	0.24	2.85	2.67	1.45	4.33	0.34	0.26	0.11	0.93	6.02	4.64	1.62	16.6
3,4,5,6-Tetrachloro-veratrole	<0.002				<0.02				<0.002	<0.002			<0.02			
Pentachloroanisole	0.040	0.017	0.005	0.15	0.70	0.28	0.07	2.66	0.029	0.023	0.004	0.07	0.52	0.41	0.08	1.23
α-HCH	0.041	0.024	0.006	0.11	0.70	0.38	0.09	1.95	0.056	0.052	0.031	0.10	0.99	0.91	0.49	1.58
β-HCH	0.10	0.097	0.059	0.17	1.66	1.56	1.11	2.93	0.079	0.072	0.040	0.17	1.38	1.27	0.71	2.54
γ-HCH	0.056	0.035	0.005	0.14	0.95	0.57	0.07	2.48	0.063	0.058	0.032	0.13	1.11	1.02	0.56	1.92
Pentachloronitrobenzene	<0.002				<0.02				<0.002				<0.02			
Heptachlor	<0.002				<0.02				<0.002				<0.02			
Aldrin	<0.002				<0.02				<0.002				<0.02			
Dacthal	<0.002				<0.02				<0.002				<0.02			
octachlorostyrene	<0.002				<0.02				<0.002				<0.02			
Heptachlor Epoxide	0.044	0.033	0.010	0.080	0.716	0.53	0.16	1.47	0.046	0.037	0.017	0.15	0.78	0.65	0.27	2.23

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
Oxychlordane	0.033	0.020	0.004	0.10	0.510	0.32	0.064	1.48	0.039	0.025	0.009	0.14	0.66	0.44	0.15	2.08
trans-chlordane	<0.002				<0.02				<0.002	<0.002			<0.02			
cis-chlordane	0.017	0.011	<0.002	0.038	0.298	0.174	0.014	0.697	0.026	0.022	0.010	0.065	0.45	0.383	0.148	1.000
trans-nonachlor	0.031	0.016	0.004	0.058	<0.02				<0.002				<0.02			
Dieldrin	<0.002				<0.02				<0.002				<0.02			
cis-nonachlor	<0.002				<0.02				<0.002				<0.02			
Endrin	<0.002				<0.02				<0.002				<0.02			
α-Endosulfan	0.013	0.010	0.004	0.024	0.204	0.16	0.053	0.35	0.006	0.004	<0.002	0.025	0.11	0.066	0.021	0.50
β-Endosulfan	0.007	0.006	0.003	0.015	0.109	0.092	0.036	0.22	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.10
Endosulfan sulfate	0.026	0.015	0.003	0.092	0.434	0.24	0.059	1.73	0.005	0.004	0.002	0.008	0.086	0.079	0.034	0.13
o,p'-DDE	<0.002				<0.02				<0.02				<0.2			
p,p'-DDE	0.013	0.013	0.013	0.014	<0.02				<0.02				<0.2			
o,p'-DDD	<0.002				<0.02				<0.02				<0.2			
p,p'-DDD	0.017	0.017	0.017	0.017	<0.02				<0.02				<0.2			
o,p'-DDT	<0.002				<0.02				<0.02				<0.2			
p,p'-DDT	<0.002				<0.02				<0.02				<0.2			
Methoxychlor	<0.002				<0.02				<0.02				<0.2			
Mirex	0.004	0.002	<0.002	0.014	0.071	0.040	0.014	0.26	0.004	0.003	<0.002	0.013	0.073	0.049	0.012	0.26
Toxaphene	0.840	0.642	0.278	2.17	13.6	10.3	4.37	30.7	1.06	0.850	0.167	1.83	18.8	15.0	2.57	32.7
Hexachlorobornanes	0.026	0.008	<0.002	0.103	0.419	0.131	0.014	1.46	0.012	0.007	0.005	0.062	0.235	0.126	0.077	1.237

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
Heptachlorobornanes	0.366	0.047	0.003	1.50	5.83	0.753	0.039	21.3	0.123	0.039	0.005	0.494	2.077	0.682	0.077	7.72
Octachlorobornanes	0.086	0.039	<0.002	0.251	1.50	0.629	0.014	4.72	0.267	0.174	0.005	0.431	4.70	3.07	0.077	7.70
Nonachlorobornanes	0.318	0.311	0.225	0.447	5.10	4.99	3.54	6.72	0.481	0.260	0.005	1.26	8.50	4.60	0.077	22.6
Decachlorobornanes	0.048	0.043	0.015	0.085	0.770	0.683	0.211	1.183	0.186	0.104	0.010	0.525	3.43	1.83	0.208	10.5
P26	<0.02								<0.02				<0.2			
P50	<0.02								<0.02				<0.2			
P62	<0.02								<0.02				<0.2			
PCB-1	<0.002				<0.02				<0.002				<0.02			
PCB-3	<0.002				<0.02				<0.002				<0.02			
PCB4/10	0.005	0.005	0.004	0.009	0.086	0.083	0.051	0.13	0.028	0.008	0.005	0.19	0.502	0.14	0.077	3.39
PCB7/9	0.036	0.020	0.005	0.064	0.553	0.328	0.079	1.07	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB6	0.006	0.006	0.004	0.008	0.092	0.090	0.060	0.13	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB8/5	0.016	0.013	0.005	0.026	0.213	0.150	0.020	0.37	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB12/13	<0.002				<0.02				<0.002				<0.02			
PCB15	0.117	0.011	<0.002	0.420	2.05	0.172	0.014	7.71	0.106	0.048	0.005	0.330	1.907	0.855	0.089	5.89
PCB19	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB18	0.045	0.045	0.039	0.053	0.68	0.676	0.566	0.76	<0.002				<0.02			
PCB17	0.038	0.025	0.005	0.090	0.63	0.396	0.089	1.65	0.021	0.015	0.005	0.060	0.362	0.258	0.077	0.92
PCB27/24	0.003	0.002	<0.002	0.004	0.044	0.037	0.016	0.071	<0.002				<0.02			
PCB16/32	0.009	0.004	0.000	0.018	0.138	0.060	0.004	0.26	<0.002				<0.02			

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
PCB26	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB25	0.006	0.005	0.002	0.013	0.113	0.076	0.033	0.252	<0.002				<0.02			
PCB31/28	0.029	0.015	0.005	0.085	0.47	0.235	0.079	1.60	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB20/33/21	0.043	0.014	0.004	0.24	0.74	0.217	0.057	4.26	0.068	0.015	0.005	0.435	1.061	0.259	0.078	6.69
PCB22	0.002	<0.002	<0.002	0.003	0.027	0.020	0.010	0.044	<0.002				<0.02			
PCB37	0.003	0.002	<0.002	0.005	0.046	0.032	0.014	0.092	0.018	0.007	0.005	0.110	0.351	0.130	0.077	2.20
PCB53	0.004	0.004	0.004	0.004	0.083	0.083	0.083	0.083	<0.002				<0.02			
PCB45	0.011	0.010	0.008	0.013	0.18	0.170	0.120	0.24	<0.002				<0.02			
PCB46	0.006	0.005	0.003	0.009	0.10	0.084	0.044	0.16	<0.002				<0.02			
PCB73/52	0.079	0.020	<0.002	0.27	1.33	0.33	0.014	4.25	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB43/49	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB48/47/75	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB44	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB59/42	0.019	0.007	<0.002	0.036	0.298	0.118	0.016	0.67	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB71/41/68/64	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB63	0.003	0.003	0.003	0.003	0.056	0.056	0.056	0.06	<0.002				<0.02			
PCB74/61	0.010	0.002	0.000	0.060	0.168	0.040	0.007	0.94	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB70/76	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB80/66	0.068	0.015	<0.002	0.13	1.054	0.24	0.016	2.49	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB56/60	0.041	0.008	<0.002	0.12	0.706	0.12	0.014	2.20	0.046	0.031	0.005	0.14	0.81	0.546	0.077	2.50

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
PCB81	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB95/93	0.002	0.002	<0.002	0.005	0.037	0.026	0.014	0.092	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB91	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB92	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB84/90/101/89	0.018	0.003	<0.002	0.100	0.286	0.040	0.014	1.83	0.005	0.005	0.005	0.005	0.089	0.088	0.077	0.100
PCB99	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB83/108	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB97	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB86/111/125/117/87/116/115	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB120/85	0.026	0.008	<0.002	0.075	0.452	0.122	0.014	1.38	0.028	0.025	0.015	0.040	0.48	0.45	0.23	0.71
PCB110	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB82	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB107/109	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB123	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB118/106	0.006	0.006	0.006	0.006	0.087	0.087	0.087	0.087	<0.002				<0.02			
PCB114	0.000	0.000	0.000	0.000	0.003	0.003	0.003	0.003	<0.002				<0.02			
PCB105/127	0.002	<0.002	<0.002	0.006	0.031	0.021	0.014	0.12	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB126	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB151	<0.002				<0.02				<0.002	<0.002			<0.02			

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
PCB135/144	0.008	0.002	<0.002	0.051	0.149	0.028	0.014	0.95	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB139/149	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB131/165/142/146	0.003	0.002	<0.002	0.005	0.051	0.037	0.014	0.092	0.006	0.005	0.005	0.010	0.101	0.096	0.077	0.200
PCB153	0.003	0.002	<0.002	0.005	0.055	0.040	0.014	0.092	0.014	0.007	0.005	0.080	0.26	0.125	0.077	1.429
PCB132/168	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB141	0.003	0.003	0.003	0.003	0.048	0.048	0.048	0.048	<0.002				<0.02			
PCB137	0.003	0.002	<0.002	0.005	0.055	0.040	0.014	0.092	0.006	0.005	0.005	0.010	0.10	0.096	0.077	0.179
PCB163/164/138	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB158/160	<0.002	<0.002	<0.002	<0.002	0.016	0.016	0.016	0.016	<0.002				<0.02			
PCB129	0.003	0.003	0.003	0.003	0.058	0.058	0.058	0.058	<0.002				<0.02			
PCB159	0.005	0.003	<0.002	0.012	0.076	0.049	0.016	0.22	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB128/167	0.005	0.005	0.005	0.005	0.085	0.085	0.085	0.085	<0.002				<0.02			
PCB156	0.002	0.002	<0.002	0.007	0.038	0.025	0.008	0.14	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB157	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB169	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB182/187	0.003	0.002	<0.002	0.011	0.045	0.025	0.014	0.20	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB183	0.003	0.002	<0.002	0.014	0.059	0.029	0.014	0.26	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB174/181	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB177	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB171	<0.002				<0.02				<0.002	<0.002			<0.02			

Table S6 continued . . . .

Table S6 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
PCB172/192	<0.002	<0.002	<0.002	<0.002	0.016	0.016	0.014	0.020	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB180	0.003	0.002	<0.002	0.007	0.041	0.027	0.014	0.11	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB193	0.009	0.002	<0.002	0.058	0.17	0.034	0.014	1.08	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB191	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB170/190	<0.002	<0.002	<0.002	<0.002	0.011	0.011	0.011	0.011	<0.002				<0.02			
PCB-202	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB199	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB196/203	0.002	0.002	<0.002	0.005	0.036	0.030	0.016	0.090	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB195	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB194	<0.002	<0.002	<0.002	0.002	0.022	0.021	0.016	0.033	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB205	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB208	0.005	0.002	<0.002	0.032	0.099	0.027	0.009	0.593	<0.002	<0.002	<0.002	<0.002	0.018	0.018	0.015	0.020
PCB207	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB206	<0.002				<0.02				<0.002	<0.002			<0.02			
PCB209	<0.002				<0.02				<0.002	<0.002			<0.02			

Table S7. Arithmetic and geometric mean concentrations of brominated and chlorinated flame retardants (ng/g wet wt and ng/g lipid wt, n = 7). "<" values are instrument detection limits where arithmetic means were <0.001-0.002 ng/g ww. "na" indicates not available.

	Dehcho	Dehcho	Dehcho	Dehcho	Dehcho	Dehcho	Dehcho	Dehcho	South Slave	South Slave	South Slave	South Slave	South Slave	South Slave	South Slave	South Slave
	Arith Mean	GM	min	max	Arith Mean	GM	min	max	Arith Mean	GM	min	max	Arith Mean	GM	min	max
Analyte	ng/ g ww	ng/ g ww	ng/ g ww	ng/ g ww	ng/g lw	ng/g lw	ng/g lw	ng/g lw	ng/ g ww	ng/ g ww	ng/ g ww	ng/ g ww	ng/ g lw	ng/ g lw	ng/ g lw	ng/ g lw
BDE 17	<0.002	0.001	<0.002	0.002	0.011	0.011	<0.007	0.022	<0.002	0.001	<0.002	0.002	0.009	0.009	<0.008	0.010
BDE 28/33	0.003	0.001	0.001	0.010	0.046	0.023	0.007	0.14	0.001	0.001	0.001	0.001	0.009	0.009	0.008	0.010
BDE 47	0.127	0.037	0.005	0.513	2.17	0.585	0.069	9.40	0.057	0.048	0.023	0.133	0.998	0.845	0.353	2.370
BDE 49	0.004	0.002	0.001	0.012	0.07	0.03	0.007	0.22	0.001	0.001	0.001	0.001	0.009	0.009	0.008	0.010
BDE 66	0.002	0.001	0.000	0.005	0.032	0.018	0.004	0.076	0.001	0.001	0.001	0.001	0.009	0.009	0.008	0.010
BDE 85	0.006	0.001	0.001	0.038	0.111	0.021	0.007	0.689	0.004	0.001	0.001	0.015	0.063	0.020	0.008	0.231
BDE 99	0.148	0.036	0.005	0.668	2.56	0.581	0.069	12.26	0.081	0.054	0.019	0.266	1.41	0.951	0.300	4.75
BDE 100	0.026	0.008	0.001	0.134	0.466	0.129	0.007	2.47	0.018	0.012	0.004	0.053	0.304	0.218	0.063	0.945
BDE 138	<0.002				0.111	0.021	0.007	0.69	<0.002				0.063	0.020	0.008	0.23
BDE 153	0.014	0.007	0.001	0.061	0.250	0.106	0.008	1.12	0.008	0.003	0.001	0.025	0.135	0.055	0.008	0.389
BDE 154	0.010	0.004	0.001	0.048	0.181	0.063	0.008	0.883	0.005	0.001	0.001	0.020	0.086	0.022	0.008	0.320
BDE 183	<0.002				<0.01				<0.002				<0.01			
BDE 190	<0.002				<0.01				<0.002				<0.01			
BDE 209	0.15	0.077	0.004	0.543	2.26	1.24	0.077	7.69	na				na			
TBP-AE	<0.002				<0.01				0.027	0.003	<0.002	0.200	0.491	0.045	0.008	3.57
TBP-DBPE	<0.002				<0.01				<0.002				<0.01			
BEHTBP	<0.002				<0.01				<0.002				<0.01			

Table S7 continued . . . .

Table S7 continued

Analyte	Dehcho Arith Mean ng/g ww	Dehcho GM ng/g ww	Dehcho min ng/g ww	Dehcho max ng/g ww	Dehcho Arith Mean ng/g lw	Dehcho GM ng/g lw	Dehcho min ng/g lw	Dehcho max ng/g lw	South Slave Arith Mean ng/g ww	South Slave GM ng/g ww	South Slave min ng/g ww	South Slave max ng/g ww	South Slave Arith Mean ng/g lw	South Slave GM ng/g lw	South Slave min ng/g lw	South Slave max ng/g lw
BTBPE	<0.002				<0.01				<0.002				<0.01			
DPTE	<0.002				<0.01				<0.002				<0.01			
EHTeBB	<0.002				<0.01				<0.002				<0.01			
HBB	<0.002				<0.01				<0.002				<0.01			
OBIND	<0.002				<0.01				<0.002				<0.01			
PBBA	<0.002				<0.01				<0.002				<0.01			
PBBe	<0.002				<0.01				<0.002				<0.01			
PBEB	<0.002				<0.01				<0.002				<0.01			
PBTo	<0.002				<0.01				<0.002				<0.01			
pTBX	<0.002				<0.01				<0.002				<0.01			
syn-DP	<0.002				<0.01				<0.002				<0.01			
anti-DP	<0.002				<0.01				<0.002				<0.01			
TBCT	<0.002				<0.01				<0.002				<0.01			
HBCD	<0.002				<0.01				<0.002				<0.01			
BB-101	<0.002				<0.01				<0.002				<0.01			

Table S8. Arithmetic and geometric mean concentrations of individual PFASs in moose liver samples (ng/g ww).

Analyte	Dehcho ng/g ww AM	Dehcho ng/g ww GM	Dehcho ng/g ww min	Dehcho ng/g ww max	South Slave ng/g ww AM	South Slave ng/g ww GM	South Slave ng/g ww min	South Slave ng/g ww max
PFBA	<0.16				<0.16			
PFPeA	<1.2				<1.2			
PFHxA	<0.15				<0.15			
PFHpA	<0.005				<0.005			
PFOA	0.069	0.067	0.056	0.113	0.090	0.085	0.050	0.138
PFNA	0.255	0.243	0.174	0.448	0.188	0.171	0.080	0.370
PFDA	0.240	0.204	0.078	0.601	0.159	0.149	0.069	0.241
PFUnA	0.167	0.152	0.096	0.275	0.094	0.090	0.058	0.138
PFDoA	0.008	0.005	0.003	0.020	0.017	0.016	0.008	0.023
PFTriA	0.011	0.006	0.003	0.032	0.023	0.021	0.010	0.041
PFTA	0.004	0.003	<0.003	0.015	0.012	0.008	0.003	0.045
PFHxDA	0.004	0.003	0.003	0.010	0.049	0.032	0.010	0.173
PFBS	0.055	0.052	0.026	0.087	0.029	0.018	0.003	0.051
PFHxS	0.063	0.057	0.022	0.106	0.012	0.007	0.003	0.054
PFHpS	<0.005				<0.005			
PFOS	0.437	0.377	0.210	0.993	0.252	0.244	0.174	0.335
PFOS_Linear	0.189	0.189	0.173	0.202	0.183	0.172	0.088	0.262
PFDS	0.009	0.005	0.003	0.034	<0.005			
PFOSA	0.008	0.004	0.003	0.030	0.012	0.008	0.003	0.032

Table S9A. Pearson correlation matrix for major halogenated organic contaminants in moose liver. Correlation coefficients in bold are significant at $P < 0.05$.

	Age	% lipid	Log ΣPFCA	Log ΣPFSA	Log Σ_{13}PBDE	Log ΣPCB	Log ΣEndo-sulfan	Log Toxa-phene	Log ΣDDT	Log ΣCHL	Log ΣHCH	Log ΣCBZ	Log ΣMono_Di CB	Log ΣTri-CB	Log ΣTetra-CB	Log Σpenta-CB
Age	1															
% lipid	0.266	1														
Log ΣPFCA	0.248	0.406	1													
Log ΣPFSA	0.076	**0.590**	**0.699**	1												
Log Σ_{13}PBDE	0.187	0.341	0.018	0.138	1											
Log ΣPCB	0.285	0.042	−0.001	−0.033	0.460	1										
Log ΣEndo-sulfan	0.006	0.341	0.328	**0.618**	0.005	0.309	1									
Log Toxa-phene	−0.288	−0.152	−0.498	−0.505	−0.201	−0.046	−0.054	1								
Log ΣDDT	−0.368	0.42	−0.038	0.418	−0.086	0.103	0.623	0.268	1							
Log ΣCHL	0.107	0.103	0.05	−0.096	**0.602**	0.358	−0.423	−0.314	−0.505	1						
Log ΣHCH	0.149	−0.240	−0.251	**−0.405**	−0.011	−0.294	−0.79	−0.195	**−0.698**	0.514	1					
Log ΣCBZ	0.38	−0.496	−0.163	**−0.555**	0.032	0.052	**−0.622**	−0.154	**−0.821**	0.457	0.75	1				
Log ΣMono_Di-CB	0.227	**−0.556**	−0.371	**−0.829**	−0.324	0.147	**−0.514**	0.212	**−0.559**	0.089	0.488	**0.671**	1			
Log ΣTri-CB	−0.028	−0.481	−0.118	**−0.583**	−0.325	0.036	**−0.643**	−0.038	−0.502	0.321	**0.594**	**0.592**	**0.781**	1		
Log ΣTetra-CB	0.485	−0.319	−0.426	**−0.605**	0.154	**0.613**	−0.285	0.091	−0.267	0.201	0.233	**0.546**	**0.709**	0.459	1	
Log Σpenta-CB	0.518	−0.384	−0.018	−0.339	−0.303	0.223	−0.202	−0.229	−0.426	0.059	0.344	**0.628**	**0.681**	**0.664**	0.667	1
Log Σhexa-CB	−0.294	0.421	0.365	**0.576**	−0.196	−0.081	0.555	0.277	0.686	−0.309	**−0.659**	**−0.717**	**−0.662**	−0.453	**−0.588**	−0.416

Table S9B. Pearson correlation matrix for selected individual halogenated organic contaminants in moose liver. Correlation coefficients in bold are significant at $P < 0.05$.

	AGE	% lipid	Log HCBD	Log 1245-TeCBz	Log 1234-TeCBz	Log PeCBz	Log HCB	Log PCA	Log αHCH	Log βHCH	Log γHCH	Log hepta-chlor epoxide	Log Oxychlordane
AGE	1.000												
% lipid	0.266	1.000											
Log HCBD	0.035	**0.569**	1.000										
Log 1245_TeCBz	0.341	−0.513	**−0.608**	1.000									
Log 1234_TeCBz	0.347	−0.513	**−0.599**	1.000	1.000								
Log PeCBz	0.342	−0.457	**−0.552**	**0.972**	**0.972**	1.000							
Log HCB	0.103	−0.426	−0.510	0.467	0.458	0.476	1.000						
Log PCA	0.436	−0.298	−0.529	**0.778**	**0.770**	**0.828**	**0.543**	1.000					
Log αHCH	0.240	**−0.587**	−0.520	**0.920**	**0.919**	**0.872**	**0.591**	0.664	1.000				
Log βHCH	−0.178	0.408	0.416	−0.130	−0.128	−0.117	−0.341	−0.217	−0.170	1.000			
Log γHCH	0.139	−0.351	**−0.551**	**0.641**	**0.641**	**0.697**	0.414	0.537	0.512	0.155	1.000		
Log heptachlor epoxide	0.329	0.021	−0.059	**0.531**	**0.534**	**0.542**	0.116	0.556	0.327	0.172	0.302	1.000	
Log Oxychlordane	−0.038	0.265	−0.027	0.114	0.112	0.212	0.335	0.308	0.146	0.282	0.364	0.306	1.000
Log *cis*-chlordane	0.201	**−0.594**	−0.376	**0.721**	**0.723**	**0.679**	0.283	0.462	**0.633**	−0.282	0.383	**0.586**	−0.238
Log α-Endosulfan	0.124	0.369	0.327	−0.320	−0.314	−0.283	−0.457	0.023	−0.494	−0.025	−0.406	0.380	−0.140
Log endosulfan sulfate	0.072	0.432	**0.635**	**−0.729**	**−0.726**	**−0.700**	−0.499	−0.528	**−0.650**	−0.180	**−0.693**	−0.436	−0.444
Log mirex	−0.102	−0.464	0.036	0.186	0.197	0.127	−0.047	−0.274	0.321	0.134	0.182	−0.154	−0.337
Log BDE47	0.462	−0.225	−0.311	**0.631**	**0.628**	**0.632**	0.333	**0.736**	0.448	−0.068	0.425	**0.830**	0.258
Log PFNA	0.148	0.452	0.548	−0.311	−0.306	−0.285	−0.498	−0.336	−0.437	0.415	−0.071	0.333	−0.040
Log PFDA	0.391	0.339	0.295	−0.211	−0.208	−0.264	−0.010	−0.234	−0.246	0.152	−0.100	0.296	−0.059
Log PFUNA	0.025	0.502	**0.625**	**−0.677**	**−0.671**	**−0.694**	−0.433	**−0.665**	**−0.705**	0.085	**−0.617**	−0.010	−0.282
Log PFBS	−0.005	0.245	**0.589**	−0.185	−0.170	−0.173	−0.475	−0.246	−0.201	**0.743**	−0.101	0.213	0.001
Log PFHXS	0.193	0.359	**0.678**	−0.408	−0.397	−0.336	−0.164	−0.149	−0.281	−0.160	**−0.627**	0.053	0.151
Log PFOS	−0.008	**0.555**	**0.611**	**−0.705**	**−0.704**	**−0.715**	−0.236	**−0.590**	**−0.702**	0.368	−0.381	−0.023	−0.087

	Log Oxychlordane	Log *cis*-chlordane	Log αEndoslfan	Log endosulfan sulfate	Log BDE47	Log PFNA	Log PFDA	Log PFUNA	Log PFBS	Log PFHXS
AGE										
% lipid										
Log HCBD										
Log 1245_TCBZ										
Log 1234_TCBZ										
Log PeCBZ										
Log HCB										
Log PCA										
Log αHCH										
Log βHCH										
Log γHCH										
Log heptachlor epoxide										
Log Oxychlordane										
Log *cis*-chlordane	1									
Log α-Endosulfan	−0.076	1								
Log endosulfan sulfate	−0.353	0.459	1							
Log mirex	0.444	−0.471	−0.044	1						
Log BDE47	**0.635**	0.119	**−0.531**	−0.087	1					
Log PFNA	0.151	0.302	0.346	0.238	0.18	1				
Log PFDA	0.185	0.128	0.212	0.228	0.293	0.73	1			
Log PFUNA	−0.152	0.382	**0.607**	0.053	−0.161	**0.695**	**0.717**	1		
Log PFBS	−0.169	0.323	0.085	0.276	−0.044	0.38	0.182	0.237	1	
Log PFHXS	−0.267	0.482	0.552	−0.209	−0.085	0.126	0.119	0.419	0.272	1
Log PFOS	−0.317	0.313	0.487	−0.015	−0.185	**0.658**	**0.759**	**0.842**	0.369	0.257

Table S9C. Pearson correlation matrix for selected PCB congeners (co-eluters reported as single GC peaks) in moose liver. Correlation coefficients in bold are significant at $P < 0.05$.

	Age	% Lipid	Log CB 15	Log CB 31_28	Log CB 73_52	Log CB 56_60	Log CB 105_127	Log CB153	Log CB156	Log CB180
Age	1									
% Lipid	0.266	1								
Log CB15	−0.455	0.066	1							
Log CB31_28	0.388	−0.424	−0.309	1						
Log CB73_52	−0.372	0.351	0.155	**−0.721**	1					
Log CB56_60	0.395	−0.054	−0.285	0.249	0.213	1				
Log CB105_127	0.424	**−0.532**	−0.187	**0.922**	**−0.770**	0.243	1			
Log CB153	−0.239	−0.223	−0.003	−0.367	**0.646**	0.220	−0.311	1		
Log CB156	0.129	**−0.572**	0.250	0.326	−0.466	0.043	**0.625**	0.014	1	
Log CB180	−0.113	0.021	−0.025	−0.500	0.474	−0.123	−0.492	**0.796**	−0.194	1
Log CB196_203	−0.063	0.139	−0.212	−0.538	0.438	−0.181	−0.558	**0.612**	−0.299	0.886

Table S10A. Comparison of mean concentrations (log ng/g wet wt) of major halogenated organics in moose liver from the Dehcho and South Slave (SSR) regions using the Students *t*-test assuming separate variance; significant values are bolded ($P < 0.05$).

Variable	Region	n	Mean	Stand Dev	Mean Difference	Lower 95% Limit	Upper 95% Limit	t	df	p-Value
Log ΣPFCA	Dehcho	7	−0.152	0.162	0.057	−0.105	0.218	0.783	10.129	0.452
	SSR	7	−0.209	0.102						
Log ΣPFSA	Dehcho	7	−0.284	0.189	0.245	0.061	0.429	3.0	9.382	**0.014**
	SSR	7	−0.529	0.105						
Log ΣPBDE	Dehcho	7	−0.589	0.516	0.354	−0.175	0.884	1.474	10.923	0.169
	SSR	7	−0.943	0.373						
Log ΣPCB	Dehcho	7	−0.217	0.177	0.24	0.016	0.465	2.341	11.742	**0.038**
	SSR	7	−0.458	0.206						
Log ΣEndosulfan	Dehcho	7	−1.478	0.373	0.361	−0.002	0.724	2.238	9.396	**0.051**
	SSR	7	−1.839	0.208						
Log Toxaphene	Dehcho	7	−0.192	0.329	−0.190	−0.533	0.153	−1.215	11.197	0.249
	SSR	7	−0.002	0.250						
Log ΣCHL	Dehcho	7	−1.052	0.296	0.033	−0.281	0.346	0.23	11	0.823
	SSR	7	−1.085	0.237						
Log ΣHCH	Dehcho	7	−0.859	0.143	−0.123	−0.277	0.03	−1.76	11.553	0.105
	SSR	7	−0.736	0.118						
Log ΣCBZ	Dehcho	7	−0.479	0.443	−0.351	−0.767	0.066	−1.954	7.722	0.088
	SSR	7	−0.128	0.17						
Log ΣMono_Di-CB	Dehcho	7	−1.503	1.086	−1.081	−2.118	−0.04	−2.375	8.616	**0.043**
	SSR	7	−0.422	0.520						
Log ΣTri-CB	Dehcho	7	−1.844	0.830	−0.608	−1.402	0.187	−1.739	8.735	0.117
	SSR	7	−1.236	0.408						
LogΣTetra-CB	Dehcho	7	−1.301	0.690	0.009	−0.639	0.658	0.033	7.712	0.975
	SSR	7	−1.31	0.264						
LogΣhexa-CB	Dehcho	7	−1.349	0.621	0.342	−0.251	0.936	1.314	8.635	0.223
	SSR	7	−1.692	0.299						

Table S10B. Comparison of mean concentrations (log ng/g wet wt) of major individual halogenated organic contaminants in moose liver from the Dehcho and South Slave (SSR) regions using the Students *t*-test assuming separate variance; significant values are bolded ($P < 0.05$).

Variable	Region	n	Mean	Stand Dev	Mean Difference	Lower 95% CI	Upper 95% CI	t	df	p-Value
Log HCBD	Dehcho	7	−1.982	0.13	0.406	0.254	0.558	5.81	12	**0.001**
	SSR	7	−2.388	0.131						
Log 1245-TeCBz	JMR	7	−1.804	1.119	−0.932	−1.968	0.103	−2.184	6.224	0.07
	SSR	7	−0.872	0.153						
Log 1234-TeCBz	JMR	7	−1.785	1.144	−0.932	−1.99	0.126	−2.139	6.181	0.075
	SSR	7	−0.853	0.14						
Log PeCBz	Dehcho	7	−1.436	0.725	−0.599	−1.271	0.073	−2.14	7	0.072
	SSR	7	−0.837	0.16						
Log HCB	Dehcho	7	−0.779	0.135	−0.229	−0.505	0.046	−1.90	8	0.092
	SSR	7	−0.549	0.29						
Log PCA	Dehcho	7	−2.03	0.67	−0.397	−1.051	0.256	−1.36	10	0.204
	SSR	7	−1.633	0.381						
Log α-HCH	Dehcho	7	−1.623	0.513	−0.341	−0.818	0.137	−1.683	7.07	0.118
	SSR	7	−1.282	0.154						
Log β-HCH	Dehcho	7	−1.109	0.081	0.044	−0.108	0.197	0.657	8.92	0.523
	SSR	7	−1.153	0.159						
Log γ-HCH	Dehcho	7	−1.684	0.313	−0.44	−0.741	−0.138	−3.307	8.93	**0.006**
	SSR	7	−1.244	0.16						0.118
Log heptachlor-epoxide	Dehcho	7	−1.480	0.387	−0.002	−0.385	0.38	−0.014	9.923	0.989
	SSR	7	−1.477	0.236						
Log oxychlordane	Dehcho	7	−1.7	0.508	−0.040	−0.577	0.497	−0.16	11	0.873
	SSR	7	−1.66	0.401						
Log *cis*-chlordane	Dehcho	7	−1.965	0.552	−0.280	−0.803	0.243	−1.23	8	0.254
	SSR	7	−1.686	0.241						

Table S10B continued . . . .

Table S10B continued

Variable	Region	n	Mean	Stand Dev	Mean Difference	Lower 95% CI	Upper 95% CI	t	df	p-Value
Log α-endosulfan	Dehcho	7	−2.091	0.424	0.353	−0.147	0.854	1.54	12	0.150
	SSR	7	−2.445	0.435						
Log endosulfan sulfate	Dehcho	7	−1.825	0.479	0.521	0.062	0.980	2.58	9	**0.030**
	SSR	7	−2.346	0.236						
Log mirex	Dehcho	7	−2.604	0.437	−0.031	−0.536	0.474	−0.135	12	0.895
	SSR	7	−2.573	0.430						
Log BDE47	Dehcho	7	−1.437	0.851	−0.097	−0.890	0.697	−0.29	7	0.783
	SSR	7	−1.341	0.277						
Log PFNA	Dehcho	7	−0.615	0.142	0.153	−0.057	0.363	1.61	11	0.137
	SSR	7	−0.768	0.207						
Log PFDA	Dehcho	7	−0.69	0.26	0.138	−0.126	0.402	1.15	11	0.274
	SSR	7	−0.827	0.179						
Log PFUNA	Dehcho	7	−0.817	0.2	0.226	0.028	0.425	2.54	10	**0.029**
	SSR	7	−1.044	0.126						
Log PFOS	Dehcho	7	−0.423	0.243	0.189	−0.043	0.421	1.86	9	0.098
	SSR	7	−0.612	0.117						
Log PFBS	Dehcho	7	−1.28	0.154	0.467	−0.078	1.012	2.035	6.827	0.082
	SSR	7	−1.747	0.587						
Log PFHxS	Dehcho	7	−1.246	0.226	0.94	0.48	1.4	4.663	8.504	**0.001**
	SSR	7	−2.186	0.483						
Log PCB15	Dehcho	7	−1.969	1.29	−0.645	−1.903	0.614	−1.15	10	0.278
	SSR	7	−1.325	0.733						
Log PCB17	Dehcho	7	−1.607	0.454	0.199	−0.259	0.658	0.96	11	0.358
	SSR	7	−1.806	0.307						

Table S10B continued . . . .

Table S10B continued

Variable	Region	n	Mean	Stand Dev	Mean Difference	Lower 95% CI	Upper 95% CI	t	df	p-Value
Log CB20_33_21	Dehcho	7	−1.869	0.616	0.064	−0.685	0.812	0.19	12	0.855
	SSR	7	−1.932	0.668						
Log PCB56_60	Dehcho	7	−2.109	1.01	−0.675	−1.619	0.268	−1.68	7	0.135
	SSR	7	−1.433	0.342						
Log PCB153	Dehcho	7	−2.607	0.368	−0.478	−0.962	0.006	−2.16	11	0.053
	SSR	7	−2.129	0.455						