

Table S1. Sample information for the Australasian harriers collected from the Canterbury Region, New Zealand.

Sample	Geographical location (Lat, Long)	Date	General condition of carcass	Body weight (g)
Harrier 1	43.69576S, 172.47892	March 2012	Reasonable	720
Harrier 2	43.77058S, 172.09553	March 2012	Poor	600
Harrier 3	43.64563S, 172.46453	March 2012	Average	674
Harrier 4	43.64880S, 172.55273	May 2012	Average	628

Table S2. Suite of persistent organic pollutants analysed.

Contaminant Group	Individual Analytes
Organochlorine pesticides (OCP)	α -hexachlorohexane (HCH), β -HCH, γ -HCH, δ -HCH, <i>o,p'</i> -dichlorodiphenyltrichloroethane (DDT), <i>p,p'</i> -DDT, <i>o,p'</i> -dichlorodiphenyldichloroethane (DDD), <i>p,p'</i> -DDD, <i>p,p'</i> -dichlorodiphenyldichloroethylene (DDE), aldrin, heptachlor, dieldrin, endrin, <i>cis</i> -chlordane, <i>trans</i> -chlordane, <i>cis</i> -nonachlor, <i>trans</i> -nonachlor, endrin aldehyde, heptachlor epoxide, methoxychlor, mirex, endosulfan A, endosulfan B, endosulfan sulfate, pentachlorobiphenyl, hexachlorobiphenyl (HCB) Toxaphene (Parlars 26, 40/41, 44, 50 and 62)
Polychlorinated biphenyls (PCB)	1, 3, 4/10, 15, 28, 37, 44, 49, 52, 54, 70, 74, 77, 81, 99, 101, 104, 110, 105, 114, 118, 123, 126, 138/163/164, 153, 155, 156, 157, 167, 169, 170, 180, 183, 187, 188, 189, 194, 196/203, 200, 202, 205, 206, 208, and 209
Polychlorinated dibenzodioxins and furans	2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, 2,3,4,7,8-HxCDD, 1,2,3,6,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, 1,2,3,4,6,7,8-HpCDD, OCDD, 2,3,7,8-TCDF, 1,2,3,7,8-PeCDF, 2,3,4,7,8-PeCDF, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 2,3,4,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDF, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, OCDF
Brominated flame retardants	PBDE (BDE 7, 15, 17, 28/33, 30, 47, 49, 66, 71, 77, 85, 99, 100, 119/120, 126, 138/166, 139, 140, 153, 154, 156/169, 171, 180, 183/175, 184, 191, 196, 197, 201, 203, 204, 205, 206, 207, 208, and 209) PBEB, HBB, polybrominated biphenyl 153 (BB-153), and decabromodiphenylethane (DBDPE)
Perfluorinated compounds	perfluoroalkylsulfonic acids, perfluoroalkylcarboxylic acids, perfluorooctanesulfonamide, N-ethyl-perfluorooctanesulfonamidoacetic acid, N-methyl-perfluorooctanesulfonamidoacetic acid, 1H,1H,2H,2H-perfluorohexanesulfonic acid, 1H,1H,2H,2H-perfluorooctanesulfonic acid and 1H,1H,2H,2H-perfluorodecanesulfonic acid

Table S3. Individual organochlorine pesticide concentrations (ng/g lw) in Australasian harriers collected from the Canterbury Region, New Zealand.¹

Analyte	Harrier 1	Harrier 2	Harrier 3	Harrier 4
Pentachlorobenzene	0.294	0.360	0.504	0.414
HCB	8.54	9.65	11.37	9.41
Beta-BHC	4.45	18.41	5.53	3.82
Gamma-BHC	0.251	<0.13	<0.1	<0.05
Heptachlor epoxide	3.60	5.82	6.90	25.74
Gamma-chlordane	0.202	0.237	0.363	0.382
Alpha-chlordane	0.263	1.03	0.620	1.52
cis-Nonachlor	5.40	10.00	9.23	10.42
trans-Nonachlor	17.32	28.82	43.66	57.11
op-DDE	<0.27	<0.15	2.23	0.370
pp-DDE	10438	55908	197887	49510
op-DDD	0.114	<0.07	0.711	<0.06
pp-DDD	27.25	47.55	426	350
op-DDT	0.333	<0.14	2.58	<0.18
pp-DDT	43.55	37.75	750	277
Dieldrin	314	354	1504	441
Endrin	0.180	0.363	0.944	0.870
Mirex	7.27	15.48	10.39	10.39
Parlar-26	1.02	1.23	<0.24	3.77
Parlar-50	0.655	0.553	0.302	10.98
Parlar-62	<0.12	<0.78	<0.16	1.42
Parlar 40+41	0.148	0.186	<0.11	3.85
Parlar-44	0.083	<0.10	<0.11	2.41

¹Not detected in any sample: α -BHC (<0.24 ng/g lw), δ -BHC (<0.28 ng/g lw), Heptachlor (<0.13 ng/g lw), Aldrin (<0.18 ng/g lw), Endosulfan-A (<1.7 ng/g lw), Endosulfan-B (<1.4 ng/g lw), Endrin-aldehyde (1.8 ng/g lw), Endosulfan sulfate (<0.33 ng/g lw), Endrin-ketone (<1.2 ng/g lw), Methoxychlor (<0.16 ng/g lw).

Recovery of ¹³C recovery standards typically ranged between 70-100%, with the exception of HCB (21%-56%), gamma-BHC (30-53%) and mirex (43%-56%).

Table S4. Individual PCB congener concentrations (ng/g lw) in Australasian harriers collected from the Canterbury Region, New Zealand.¹

Analyte	Harrier 1	Harrier 2	Harrier 3	Harrier 4
PCB77	0.174	0.801	1.00	1.45
PCB81	0.038	0.115	0.171	0.358
PCB126	0.401	0.813	1.35	1.82
PCB169	0.304	1.03	0.905	0.716
PCB105	5.57	16.25	28.27	38.24
PCB114	0.375	1.10	1.93	3.01
PCB118	14.67	49.86	84.15	129.66
PCB123	0.287	0.769	1.36	1.62
PCB156	17.66	23.80	58.10	72.30
PCB157	2.68	4.18	9.58	10.91
PCB167	11.22	15.85	28.49	31.37
PCB189	3.72	3.83	9.15	10.25
Sum of dioxin-like PCBs	57.10	118.40	224.46	301.70
PCB1	0.002	0.003	7.54	0.003
PCB3	0.002	0.005	<0.005	<0.003
PCB4/10	<0.002	0.003	<0.037	<0.002
PCB15	0.016	0.013	<0.051	0.0095
PCB18	0.774	1.45	2.70	1.38
PCB37	0.063	0.331	0.514	0.219
PCB44	0.0367	0.0210	0.0630	0.132
PCB49	0.0635	0.284	0.458	0.819
PCB52	0.184	0.360	0.725	2.37
PCB70	0.122	0.775	0.609	3.80
PCB74	1.17	6.14	7.36	12.23
PCB99	6.08	17.26	29.01	44.61
PCB101	1.75	7.46	14.30	23.38
PCB104	<0.001	<0.001	<0.001	<0.001
PCB110	0.552	3.11	2.31	8.01
PCB138	107	176	479	618
PCB153	207	297	806	926
PCB155	0.0307	0.0545	0.107	0.0748
PCB170	60.83	69.45	179	195
PCB180	142	173	415	485
PCB183	20.54	26.86	70.42	93.63
PCB187	37.96	48.99	175	190

PCB188	0.056	0.055	0.062	0.089
PCB194	20.39	27.67	47.54	62.01
PCB196/203	18.64	29.39	54.93	70.34
PCB200	<0.001	<0.001	0.0327	<0.001
PCB202	1.59	1.73	4.19	3.48
PCB205	0.985	1.20	2.57	2.87
PCB206	4.67	7.32	7.04	9.75
PCB208	0.594	1.35	1.19	1.73
PCB209	0.922	2.88	1.70	2.14

¹Not detected in any sample: PCB19 (<0.001 ng/g lw), PCB54 (<0.001 ng/g lw).

Recovery of ¹³C recovery standards typically ranged between 70-105%, with the exception of PCB1 (20%-54%), and PCB3 (30-56%).

Table S5. Individual PCDD/PCDF concentrations (pg/g lw) in Australasian harriers collected from the Canterbury Region, New Zealand.

Analyte	Harrier 1	Harrier 2	Harrier 3	Harrier 4
PCDDs				
2,3,7,8-TCDD	5.18	10.78	12.99	11.10
1,2,3,7,8-PeCDD	13.60	16.89	28.87	20.22
1,2,3,4,7,8-HxCDD	8.25	4.84	14.33	5.66
1,2,3,6,7,8-HxCDD	36.25	23.46	142.25	27.94
1,2,3,7,8,9-HxCDD	5.84	2.18	7.82	0.67
1,2,3,4,6,7,8-HpCDD	38.93	2.70	49.30	5.07
OCDD	7.37	0.7	17.39	1.45
PCDFs				
2,3,7,8-TCDF	7.08	5.01	11.76	9.88
1,2,3,7,8-PeCDF	4.48	2.63	7.04	4.26
2,3,4,7,8-PeCDF	12.77	10.23	26.73	24.75
1,2,3,4,7,8-HxCDF	13.43	1.84	11.27	4.78
1,2,3,6,7,8-HxCDF	9.32	2.42	10.14	4.93
2,3,4,6,7,8-HxCDF	5.52	1.08	11.87	4.98
1,2,3,7,8,9-HxCDF	<0.38	<0.27	<0.80	<0.54
1,2,3,4,6,7,8-HpCDF	3.24	<0.33	12.4	1.45
1,2,3,4,7,8,9-HpCDF	<0.62	<0.60	<1.4	<1.18
OCDF	<0.85	<0.41	2.46	<0.66

Recovery of ¹³C recovery standards typically ranged between 82-105%.

Table S6. Brominated flame retardant concentrations (ng/g lw) in Australasian harriers collected from the Canterbury Region, New Zealand.¹

Analyte	Harrier 1	Harrier 2	Harrier 3	Harrier 4
BDE-15	0.029	0.010	0.027	<0.04
BDE-30	0.155	0.323	0.290	0.218
BDE-17	0.036	<0.002	<0.001	<0.003
BDE-28/33	0.574	0.115	0.186	0.165
BDE-49	0.032	0.591	0.275	0.163
BDE-71	0.628	<0.005	0.199	0.319
BDE-47	17.1	7.3	15.3	20.9
BDE-66	0.188	0.112	0.401	0.348
BDE-77	0.046	0.032	0.129	0.087
BDE-100	2.433	1.04	4.47	5.9
BDE-119/120	<0.02	0.094	<0.058	0.146
BDE-99	10.7	8.9	22.9	41.2
BDE-85	0.178	0.297	0.401	0.574
BDE-126	0.021	0.025	0.080	0.038
BDE-154	0.720	0.571	1.592	2.745
BDE-153	10.9	20.7	20.6	27.2
BDE-139	0.063	0.216	0.243	0.341
BDE-140	0.060	0.061	0.169	0.226
BDE-138/166	0.401	1.16	0.993	1.434
BDE-183/175	1.056	3.69	2.067	5.809
BDE-191	<0.011	<0.021	<0.054	0.036
BDE-180	0.104	0.320	0.326	0.510
BDE-184	<0.005	<0.010	<0.024	0.021
BDE-171	0.013	0.036	0.240	0.069
BDE-201	0.169	0.663	0.437	1.480
BDE-197	0.229	0.272	0.451	1.640
BDE-203	0.187	0.991	0.430	1.105
BDE-196	0.192	0.778	0.440	1.409
BDE-208	0.043	0.127	0.114	0.449
BDE-207	0.075	0.118	0.198	0.850
BDE-206	0.011	0.019	0.020	0.022
BDE-209	0.355	0.406	0.458	1.032
HBB	0.007	<0.007	<0.013	0.007
BB-153	280	4.380	2.6	3.333
PBEB	<0.001	<0.001	<0.001	0.011
DBDPE	1.98	2.14	1.63	0.892

¹Not detected in any sample: BDE 7 (<0.06 ng/g lw), 156/169 (<0.03 ng/g lw), 204 (<0.03 ng/g lw), 205 (<0.07 ng/g lw). Recovery of ¹³C recovery standards typically ranged between 82-130%, with the exception of BDE100 (42%-46%), and BDE209 (32%-41%).