



Predatory Bird
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Addendum to Persistent Organic Pollutants (POPs) and inorganic elements in predatory bird livers and eggs 2007 to 2009: a Predatory Bird Monitoring Scheme (PBMS) Report

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This report should be cited as:

Walker, L.A., Beith, S.J., Moeckel, C., Pereira M.G., Potter, E.D., & Shore, R.F. (2011). Addendum to Persistent Organic Pollutants (POPs) and inorganic elements in predatory bird livers and eggs 2007 to 2009: a Predatory Bird Monitoring Scheme (PBMS) Report". Centre for Ecology & Hydrology, Lancaster, UK. 42pp.

Centre for Ecology and Hydrology Project Number: NEC04288

Suggested keywords: Annual report; Birds of prey; Environmental contamination; Monitoring; Pesticides; Pollution; Predatory birds; United Kingdom (UK)

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This addendum report gives the concentrations of a selected range of polychlorinated biphenyls (PCBs) and organochlorine insecticides (OCs) in the livers of Eurasian sparrowhawks, *Accipiter nisus*, found dead in Great Britain in 2007 to 2009. In addition the concentrations of these contaminants in the eggs of northern gannet, *Morus bassanus*, merlin, *Falco columbarius*, golden eagle, *Aquila chrysaetos*, and white-tailed sea eagle, *Haliaeetus albicilla* collected in Great Britain in 2007 to 2009 are reported here. Analysis of these results is presented in the full PBMS report for 2009/10. All PBMS reports can be down-loaded from the scheme's website at <http://pbms.ceh.ac.uk/results.htm>.

Methods

A sub- sample of each egg and liver (~1 g) was thawed, weighed accurately, ground with sand and dried with anhydrous sodium sulphate. Each sample was spiked with labeled recovery standards (^{13}C OCs and ^{13}C PCBs) and soxhlet extracted in DCM for 16 h. A small portion of the extract was evaporated to zero volume and the lipid content was determined gravimetrically. The remaining of the extract was cleaned using automated size exclusion chromatography followed by deactivated alumina column. The extract was spiked with labeled internal standards and 20 μl of sample was injected into a GC-MS with programmable temperature vaporization (PTV) inlet. The PTV injector was kept at 20°C for 0.6 min, and heated to 400°C at a rate of 700°C min⁻¹ and kept at 400°C for 5 min. Then the temperature was reduced to 350°C at a rate of 10°C min⁻¹. The GC-MS had a 50 m HT8 column (0.22 mm internal diameter and 0.25 μm film thickness, SGE Milton Keynes, UK) and the carrier gas was helium (2.0 ml min⁻¹). The temperature programme was: isothermal at 50°C for 2 min, 45°C min⁻¹ to 200°C, 1.5°C min⁻¹ to 240°C and was held at 240°C for 12.5 min, 2°C min⁻¹ to 285°C, 50°C min⁻¹ to 325°C and isothermal at 325°C for 10 min. Residues were quantified using internal standard method and also calibration curves of the standard PCBs (Greyhound Ltd, Birkenhead, UK) and were recovery corrected.

The method limits of detection (LoDs) were calculated as the instrumental LoD multiplied by the dilution factor and divided by the sample weight used. The limit of detection was between 0.557 and 3.844 ng/g wet weight and the mean recoveries for ^{13}C OCs and ^{13}C PCBs varied between 67.5% and 100.3% (Table 1).

The *sum congener PCB* concentration is the sum of the concentrations of each of the 35 PCB congeners that were individually measured.

The “*Paris 10 congeners*” are a selection of individual PCB congeners defined in the 1974 Paris Commission and are congeners 28, 31, 52, 101, 105, 118, 138, 153, 156, 180. The concentrations of these congeners are summed to give the Paris 10 congener concentration.

The *sum PCB-TEQ concentrations* have been calculated using the appropriate Toxic Equivalence Factors (TEFs) as given in the 1997 World Health Organisation values that apply to birds (Van den Berg et al., 1998). TEFs have been assigned to the “dioxin-like” PCB congeners. Each individual PCB-TEQ is calculated by multiplying the wet weight concentration of the congener by the TEF for that congener. The PCB congeners for which

TEQs have been calculated are congeners 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 189. The sum PCB-TEQ concentration is the sum of the TEQs for these 12 congeners.

Results

Recoveries from ^{13}C -labelled standards are presented in Table 1. Other results are present in tables listed below. All contaminant concentrations in livers are recovery corrected.

Table 1 - Recoveries from ^{13}C -labelled organochlorine and PCBs recovery standards.

Table 2 – Provenance data for sparrowhawks found dead in 2007 to 2009 analysed for persistent organic pollutants.

Table 3 - Congener specific TEFs and PCB congener concentrations in sparrowhawk livers.

Table 4 - Congener specific and sum TEQ concentrations in sparrowhawk livers.

Table 5 - Organochlorine insecticide concentrations in sparrowhawk livers.

Table 6 - Provenance data of predatory bird eggs collected in 2007 to 2009

Table 7 - Congener specific TEFs and PCB congener concentrations in predatory bird eggs.

Table 8 - Congener specific and sum TEQ concentrations in predatory bird eggs.

Table 9 - Organochlorine insecticide concentrations in predatory bird eggs.

Table 1. Percentage recovery of ^{13}C -labelled organochlorine and PCBs recovery standards.

Analyte	Percentage Recovery			
	Mean	Standard Error	Minimum	Maximum
PCB 28	83.4	1.1	61.7	100.7
PCB 52	74.8	1.2	61.2	92.1
PCB 101	90.0	1.4	72.0	116.0
PCB 153	83.5	1.9	12.4	111.3
PCB 180	74.1	1.2	56.0	102.3
PCB 209	67.5	1.2	52.5	83.3
A-HCH	90.8	1.4	71.2	109.6
DDE	100.3	1.8	69.0	126.8

Tables for Sparrowhawk Livers

Table 2. Provenance data and fat score of juvenile (in first year) and adult (older than first year) sparrowhawks received during 2007. Fat score is a non-linear categorization to assess the amount of fat in the carcass, where 0 indicates that no fat deposits were apparent while birds with a fat score of 5 have abundant amounts of fat within the body. Typically birds that are in a starved state have a fat score of 0 or 1.

Bird No.	Year Found	Vice-County	Age	Sex	Fat Score
15460	2007	Cambridgeshire	Adult	Female	0
15461	2007	Cambridgeshire	Adult	Male	0
15499	2007	Outer Hebrides	Adult	Female	3
15502	2007	West Suffolk	Adult	Female	0
15511	2006	South Lincolnshire	Juvenile	Male	1
15519	2007	South Essex	Adult	Female	0
15523	2007	South Devon	Juvenile	Female	1
15530	2007	East Kent	Adult	Female	0
15540	2007	Renfrewshire	Juvenile	Female	2
15549	2007	South Devon	Adult	Male	1
15565	2006	West Cornwall	Juvenile	Male	*
15566	2006	West Cornwall	Juvenile	Male	*
15567	2006	East Cornwall	Juvenile	Female	*
15568	2006	West Cornwall	Juvenile	Male	*
15569	2006	South Devon	Juvenile	Male	*
15570	2007	East Cornwall	Adult	Male	*
15571	2007	West Cornwall	Adult	Male	*
15580	2006	Cornwall	Unknown	Unknown	0
15588	2007	Nottinghamshire	Adult	Female	0
15600	2007	Hertfordshire	Juvenile	Female	0
15603	2007	South Hampshire	Adult	Female	1
15607	2007	Bedfordshire	Juvenile	Male	3
15608	2007	Moray (Elgin)	Juvenile	Male	2
15609	2007	Huntingdonshire	Juvenile	Male	2
15614	2007	South Lancashire	Juvenile	Female	0
15621	2007	Moray (Elgin)	Juvenile	Female	2
15695	2007	North-east Yorkshire	Juvenile	Male	2
15720	2007	Dorset	Adult	Male	0
15729	2007	Huntingdonshire	Juvenile	Female	0
15745	2007	Staffordshire	Juvenile	Male	0

* indicates fat score was not assessed

Table 2. Provenance data and fat score of juvenile (in first year) and adult (older than first year) sparrowhawks received during 2008. Fat score is a non-linear categorization to assess the amount of fat in the carcass, where 0 indicates that no fat deposits were apparent while birds with a fat score of 5 have abundant amounts of fat within the body. Typically birds that are in a starved state have a fat score of 0 or 1.

Bird No.	Year Found	Vice-County	Age	Sex	Fat Score
15784	2008	Oxfordshire	Juvenile	Male	0
15809	2008	Staffordshire	Juvenile	Female	0
15812	2008	Huntingdonshire	Adult	Male	0
15849	2008	Orkney Islands	Juvenile	Female	2
15865	2008	Cambridgeshire	*	Male	3
15870	2008	Lancashire	Juvenile	Male	3
15871	2008	Inverness-shire	Juvenile	Female	0
15883	2008	Buckinghamshire	Adult	Female	3
15913	2008	Suffolk	Adult	Female	1
15940	2008	Dorset	Adult	Female	4
15948	2008	Huntingdonshire	Juvenile	Female	3
15958	2008	Essex	Juvenile	Male	5
15964	2008	Norfolk	Juvenile	Female	3
15967	2008	Nottinghamshire	Juvenile	Male	2
15981	2008	Berkshire	Juvenile	Male	0
15982	2008	Norfolk	Juvenile	Male	3
16033	2008	Dorset	Juvenile	Male	0
16034	2008	Essex	Adult	Female	0
16037	2008	Shropshire	Juvenile	Male	0
16040	2008	Carmarthenshire	Juvenile	Male	0
16047	2008	Dorset	Juvenile	Female	0
16049	2008	Warwickshire	Juvenile	Female	0
16087	2008	Yorkshire	Juvenile	Male	*
16089	2008	Lancashire	Juvenile	Male	2
16094	2008	Staffordshire	Adult	Female	0
16099	2008	Dorset	Juvenile	Female	0
16100	2008	East Ross	Adult	Female	5
16101	2008	Surrey	Juvenile	Female	5

* indicates fat score was not assessed

Table 2. Provenance data and fat score of juvenile (in first year) and adult (older than first year) sparrowhawks received during 2009. Fat score is a non-linear categorization to assess the amount of fat in the carcass, where 0 indicates that no fat deposits were apparent while birds with a fat score of 5 have abundant amounts of fat within the body. Typically birds that are in a starved state have a fat score of 0 or 1.

Bird No.	Year Found	Vice-County	Age	Sex	Fat Score
16122	2009	West Sussex	Adult	Female	5
16132	2009	Huntingdonshire	Adult	Female	3
16141	2009	South Northumberland	Adult	Male	4
16142	2009	Mid-west Yorkshire	Juvenile	Female	2
16149	2009	West Norfolk	Adult	Male	4
16150	2009	West Norfolk	Adult	Female	2
16151	2009	South-east Yorkshire	Juvenile	Female	0
16154	2009	Westmorland with	Adult	Female	0
16158	2008	Angus (Forfar)	Adult	Male	3
16173	2007	South Lincolnshire	Juvenile	Female	5
16212	2008	South Lancashire	Juvenile	Male	0
16227	2009	Anglesey	Adult	Male	3
16265	2009	North Essex	Adult	Male	2
16269	2009	South Essex	Adult	Male	2
16273	2009	South Devon	Adult	Female	2
16277	2009	Denbighshire	Adult	Female	2
16283	2009	East Sussex	Juvenile	Female	4
16284	2009	Fifeshire (with	Juvenile	Female	2
16346	2009	Cambridgeshire	Juvenile	Female	2
16349	2009	Cumberland	Juvenile	Male	0
16352	2009	Isle of Wight	Juvenile	Male	0
16363	2009	Shropshire (Salop)	Juvenile	Male	0
16377	2009	Derbyshire	Juvenile	Female	0
16382	2009	North Aberdeenshire	Juvenile	Male	0
16400	2009	East Suffolk	Adult	Male	3
16416	2009	Orkney Islands	Juvenile	Male	0
16553	2009	Inverness-shire	Adult	Female	0
16554	2009	Inverness-shire	Juvenile	Male	0

* indicates fat score was not assessed

Table 3. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2007.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		15460	15461	15499	15502	15511	15519	15523	15530	15540	15460
<i>CF</i>		26.30	23.74	16.75	23.79	27.25	31.25	34.46	33.06	19.20	26.30
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28		0.008	0.068	0.001	0.004	ND	0.005	0.001	0.008	ND	0.001
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	0.034	ND	ND	ND	ND	ND	0.002	ND	ND
52		0.022	0.020	0.001	0.006	0.001	0.007	ND	0.032	0.001	0.001
77	0.05	ND	ND	ND	ND	0.002	ND	ND	ND	ND	ND
81	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
101		0.069	0.038	0.004	0.039	0.001	0.035	0.005	0.085	0.004	0.005
105	0.0001	0.055	0.055	0.004	0.041	0.003	0.033	0.005	0.043	0.003	0.005
114	0.0001	0.017	0.020	0.003	0.029	ND	ND	ND	0.034	0.002	0.003
118	0.00001	0.246	0.243	0.018	0.164	0.007	0.196	0.034	0.234	0.014	0.018
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.105	0.134	0.009	0.097	0.003	0.105	0.014	0.140	0.007	0.013
138		0.552	0.609	0.038	0.419	0.008	0.517	0.050	0.704	0.025	0.055
141		0.028	0.041	0.002	0.044	0.001	0.029	0.003	0.059	0.002	0.011
149		0.065	0.031	0.003	0.086	0.001	0.048	0.004	0.138	0.004	0.017
153		1.398	1.649	0.132	1.187	0.017	1.361	0.133	1.991	0.071	0.166
156	0.0001	0.084	0.121	0.008	0.076	0.003	0.081	0.011	0.096	0.006	0.010
157	0.0001	0.012	0.015	0.002	0.011	ND	0.011	0.003	0.012	ND	0.002
163		0.301	0.380	0.024	0.378	0.007	0.346	0.035	0.611	0.020	0.052
167	0.00001	0.026	0.055	0.002	0.031	ND	0.024	0.002	0.032	0.001	0.003
169	0.001	ND	0.112	0.009	ND	ND	ND	ND	0.077	ND	ND
170		0.199	0.358	0.019	0.282	0.004	0.291	0.019	0.380	0.013	0.051
171		0.035	0.041	0.004	0.035	0.002	0.037	0.004	0.037	0.003	0.008
180		0.828	1.611	0.066	1.044	0.011	1.248	0.061	1.510	0.041	0.186
183		0.170	0.250	0.016	0.189	0.003	0.235	0.014	0.291	0.012	0.042
187		0.575	0.868	0.050	1.249	0.014	0.915	0.061	1.661	0.043	0.186
189	0.00001	0.019	0.029	0.002	0.026	ND	0.024	0.001	0.031	ND	0.003
194		0.152	0.365	0.011	0.222	0.003	0.274	0.010	0.272	0.010	0.043
199		0.001	0.001	ND	ND	ND	0.001	ND	0.001	ND	0.001
201		0.188	0.478	0.015	0.376	0.005	0.428	0.018	0.484	0.015	0.048
205		0.004	0.007	ND	0.007	ND	0.007	ND	0.007	ND	0.001
206		0.039	0.109	0.003	0.078	0.002	0.097	0.005	0.080	0.004	0.010
209		0.005	0.016	ND	0.010	ND	0.012	ND	0.010	ND	0.001
	Sum	5.201	7.760	0.444	6.129	0.098	6.366	0.491	9.061	0.300	0.945
	Paris 10	19.64	136.7	10.89	18.05	96.09	14.81	2.312	98.67	1.222	2.252

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2007.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		15565	15566	15567	15568	15569	15570	15571	15580	15588	15600
<i>CF</i>		25.13	33.91	21.46	19.51	29.71	23.42	21.15	30.52	29.67	28.47
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28		ND	ND	ND	ND	ND	ND	ND	ND	0.003	ND
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52		ND	ND	ND	ND	0.004	ND	0.002	ND	0.077	ND
77	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
81		ND	ND	ND	ND	ND	ND	ND	ND	0.006	ND
101		ND	ND	0.001	ND	0.012	0.003	0.007	ND	0.067	0.006
105	0.0001	0.001	ND	ND	0.004	0.006	ND	0.001	ND	0.049	0.002
114	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	0.009	ND
118	0.00001	0.002	ND	0.014	0.026	0.036	0.009	0.013	0.001	0.199	0.016
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.001	ND	0.009	0.011	0.015	0.006	0.007	ND	0.085	0.010
138		0.003	0.001	0.035	0.047	0.054	0.021	0.023	0.003	0.393	0.034
141		ND	ND	0.003	0.003	0.005	0.003	0.003	0.001	0.040	0.005
149		ND	ND	0.001	0.001	0.005	0.003	0.003	ND	0.078	0.006
153		0.009	0.009	0.113	0.135	0.161	0.064	0.066	0.018	0.964	0.115
156	0.0001	0.002	ND	0.007	0.020	0.022	0.004	0.006	ND	0.122	0.011
157	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	0.017	ND
163		0.004	0.003	0.038	0.043	0.049	0.028	0.021	0.003	0.372	0.037
167	0.00001	ND	0.005	0.012	0.013	0.016	0.007	0.008	0.003	0.045	0.006
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND	0.107	0.016
170		ND	0.003	0.026	0.038	0.051	0.023	0.032	0.004	0.278	0.042
171		ND	0.003	0.007	0.011	0.011	0.005	0.007	0.002	0.068	0.009
180		0.006	0.016	0.110	0.114	0.146	0.064	0.085	0.018	0.922	0.134
183		0.002	0.001	0.013	0.016	0.024	0.009	0.013	0.001	0.170	0.024
187		0.008	0.007	0.093	0.083	0.113	0.064	0.054	0.008	1.370	0.121
189	0.00001	ND	ND	0.006	0.004	0.009	0.004	0.006	ND	0.030	0.005
194		0.002	ND	0.015	0.012	0.014	0.005	0.009	0.001	0.125	0.018
199		ND	0.001	ND	ND	ND	ND	ND	ND	0.002	0.001
201		0.002	0.002	0.043	0.023	0.057	0.022	0.025	0.001	0.502	0.063
205		ND	ND	ND	ND	ND	ND	ND	ND	0.007	0.001
206		0.001	ND	0.006	0.003	0.007	0.001	0.003	ND	0.060	0.007
209		ND	ND	0.002	0.002	0.002	ND	ND	ND	0.043	0.002
	Sum	0.043	0.052	0.553	0.609	0.819	0.345	0.392	0.063	6.208	0.690
	Paris 10	0.023	0.027	0.279	0.346	0.440	0.165	0.203	0.039	2.795	0.318

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2007

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		15603	15607	15608	15609	15614	15621	15695	15720	15729	15745
<i>CF</i>		17.58	21.99	19.20	19.15	23.39	19.27	21.32	26.23	21.19	26.09
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28		0.002	ND	ND	ND	0.001	ND	ND	0.001	0.001	0.005
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	0.001	ND	ND	ND	ND	ND	0.001
52		ND	ND	ND	ND	0.002	ND	ND	ND	ND	0.003
77	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
81		ND	ND	0.001	ND	ND	0.001	ND	0.001	0.001	0.003
101		0.007	ND	ND	ND	0.007	ND	ND	0.010	0.008	0.036
105	0.0001	0.006	ND	0.002	0.001	0.011	ND	ND	0.021	0.011	0.022
114	0.0001	0.002	ND	ND	ND	0.001	ND	ND	0.013	0.006	ND
118	0.00001	0.034	0.002	0.007	0.004	0.033	0.002	0.001	0.063	0.049	0.070
123	0.00001	ND	ND	0.001	0.001	0.002	0.001	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.021	0.001	0.002	0.004	0.017	0.001	ND	0.047	0.033	0.060
138		0.077	0.005	0.002	0.007	0.005	0.003	0.002	0.017	0.009	0.036
141		0.006	0.001	ND	0.001	0.004	ND	ND	0.012	0.005	0.078
149		0.011	0.001	ND	0.001	0.010	ND	ND	0.016	0.011	0.081
153		0.169	0.013	0.020	0.032	0.101	0.012	0.005	0.644	0.291	0.783
156	0.0001	0.023	ND	0.004	0.003	0.010	0.001	0.001	0.056	0.020	0.034
157	0.0001	0.002	ND	ND	ND	0.001	ND	ND	0.008	0.003	0.003
163		0.070	0.005	0.008	0.012	0.039	0.004	0.003	0.170	0.111	0.280
167	0.00001	0.009	0.003	ND	ND	0.002	ND	ND	0.031	0.005	0.011
169	0.001	0.007	0.008	ND	ND	0.004	ND	ND	0.105	0.028	0.049
170		0.059	0.004	0.004	0.005	0.021	0.003	0.001	0.172	0.060	0.245
171		0.013	0.002	0.002	0.001	0.004	0.001	0.001	0.021	0.008	0.049
180		0.143	0.030	0.010	0.021	0.074	0.006	0.004	0.761	0.211	0.842
183		0.028	0.003	0.002	0.005	0.020	0.002	ND	0.122	0.042	0.200
187		0.183	0.019	0.010	0.039	0.103	0.007	0.006	0.613	0.345	1.283
189	0.00001	0.007	0.002	ND	0.001	0.002	ND	ND	0.022	ND	0.009
194		0.013	0.006	0.002	0.004	0.017	0.002	0.001	0.187	0.047	0.161
199		ND	ND	ND	ND	ND	ND	ND	0.001	ND	0.002
201		0.065	0.020	0.004	0.010	0.031	0.003	ND	0.236	0.086	0.274
205		0.001	ND	0.001	0.001	ND	ND	ND	0.011	0.003	0.007
206		0.007	0.010	0.001	0.002	0.008	ND	ND	0.048	0.016	0.035
209		0.006	0.001	ND	0.001	0.007	0.001	0.001	0.022	0.014	0.009
	Sum	0.972	0.135	0.083	0.156	0.535	0.049	0.026	3.431	1.424	4.671
	Paris 10	0.462	0.050	0.046	0.069	0.243	0.025	0.013	1.574	0.600	1.830

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2008.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		15784	15809	15812	15849	15865	15870	15871	15883	15913	15940
<i>CF</i>		16.85	34.41	26.12	23.65	25.03	17.84	31.64	42.67	26.89	28.68
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
28		0.004	0.008	0.004	0.001	0.002	0.004	0.001	ND	ND	0.000
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
31		ND	0.001	ND	ND	ND	ND	ND	ND	ND	0.000
52		0.015	0.014	0.018	0.001	0.001	0.005	0.001	ND	ND	0.000
77	0.05	ND	ND	ND	ND	ND	ND	0.001	ND	ND	0.000
81	0.1	ND	ND	0.002	ND	ND	ND	ND	ND	ND	0.000
101		0.025	0.059	0.025	0.003	0.002	0.008	0.008	0.005	0.005	0.002
105	0.0001	0.024	0.047	0.020	0.002	0.004	0.012	0.007	ND	0.004	0.002
114	0.0001	ND	ND	ND	ND	ND	ND	0.005	ND	0.005	0.000
118	0.00001	0.079	0.188	0.075	0.011	0.012	0.036	0.046	0.009	0.025	0.006
123	0.00001	0.003	0.007	0.003	ND	ND	ND	ND	ND	ND	0.000
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
128		0.050	0.099	0.047	0.005	0.007	0.016	0.015	0.005	0.014	0.004
138		0.175	0.320	0.165	0.018	0.021	0.052	0.090	0.020	0.078	0.015
141		0.023	0.036	0.014	0.001	0.001	0.004	0.006	0.002	0.005	0.002
149		0.037	0.057	0.029	0.004	0.003	0.011	0.009	0.005	0.008	0.002
153		0.468	0.775	0.473	0.049	0.067	0.124	0.291	0.046	0.232	0.046
156	0.0001	0.036	0.083	0.034	0.004	0.004	0.011	0.027	0.003	0.014	0.003
157	0.0001	0.006	0.012	0.006	0.001	ND	0.002	0.004	ND	ND	0.000
163		0.175	0.215	0.176	0.015	0.023	0.039	0.073	0.022	0.065	0.014
167	0.00001	0.013	0.030	0.011	0.001	0.001	0.003	0.009	ND	0.003	0.000
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
170		0.109	0.168	0.110	0.009	0.017	0.023	0.059	0.006	0.052	0.009
171		0.016	0.026	0.016	0.001	0.003	0.003	0.015	0.002	0.009	0.003
180		0.325	0.511	0.319	0.024	0.052	0.071	0.206	0.022	0.189	0.035
183		0.060	0.102	0.062	0.005	0.011	0.016	0.034	0.003	0.031	0.005
187		0.454	0.563	0.505	0.047	0.086	0.116	0.241	0.049	0.277	0.046
189	0.00001	0.006	0.016	0.007	ND	ND	0.001	0.003	ND	0.001	0.000
194		0.066	0.090	0.049	0.004	0.010	0.017	0.036	0.004	0.042	0.007
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	0.000
201		0.125	0.163	0.105	0.011	0.020	0.034	0.077	0.007	0.093	0.013
205		0.004	0.005	0.004	ND	ND	0.001	ND	ND	ND	0.000
206		0.028	0.029	0.017	0.003	0.004	0.012	0.013	0.003	0.019	0.004
209		0.030	0.025	0.021	0.003	0.003	0.008	0.012	0.001	0.003	0.000
	Sum	2.356	3.650	2.319	0.224	0.353	0.631	1.288	0.212	1.176	0.216
	Paris 10	1.152	2.005	1.134	0.114	0.165	0.323	0.677	0.106	0.547	0.109

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2008.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		15948	15958	15964	15967	15981	15982	16033	16034	16037	16040
<i>CF</i>		33.43	28.69	32.83	29.88	41.55	29.52	45.76	22.94	27.66	25.60
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	0.001	ND	ND	ND
28		ND	ND	ND	ND	ND	ND	0.007	0.002	0.002	0.001
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	0.003	ND	ND	ND
52		ND	ND	ND	ND	ND	ND	0.002	0.003	0.007	0.003
77	0.05	ND	ND	ND	ND	ND	ND	ND	0.004	0.002	0.003
81		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
101		ND	ND	ND	ND	0.010	ND	0.014	0.009	0.009	0.008
105	0.0001	ND	ND	ND	ND	0.010	ND	0.042	0.015	0.006	0.007
114	0.0001	ND	ND	ND	ND	0.007	ND	ND	0.009	0.003	0.005
118	0.00001	ND	ND	0.001	0.002	0.055	ND	0.132	0.080	0.027	0.045
123	0.00001	ND	ND	ND	ND	0.001	ND	ND	0.002	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		ND	ND	ND	0.002	0.025	ND	0.031	0.046	0.009	0.015
138		0.003	0.003	0.004	0.007	0.118	0.003	0.139	0.232	0.039	0.096
141		ND	ND	ND	ND	0.008	ND	0.005	0.005	0.003	0.005
149		ND	ND	ND	ND	0.010	ND	0.006	0.009	0.004	0.008
153		0.007	0.006	0.008	0.017	0.329	0.007	0.292	0.683	0.106	0.289
156	0.0001	ND	ND	ND	ND	0.021	ND	0.035	0.049	0.007	0.020
157	0.0001	ND	ND	ND	ND	0.003	ND	0.004	0.005	ND	0.002
163		0.002	ND	0.002	0.005	0.109	0.003	0.065	0.144	0.033	0.081
167	0.00001	ND	ND	ND	ND	0.007	ND	0.011	0.015	0.003	0.008
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
170		ND	ND	ND	0.002	0.058	ND	0.067	0.161	0.020	0.062
171		ND	ND	ND	ND	0.008	ND	0.012	0.025	0.003	0.007
180		0.006	0.004	0.006	0.010	0.216	0.006	0.240	0.780	0.072	0.256
183		0.001	ND	ND	ND	0.033	ND	0.031	0.143	0.009	0.035
187		0.005	0.003	0.006	0.009	0.307	0.007	0.129	0.443	0.104	0.258
189	0.00001	ND	ND	ND	ND	0.004	ND	0.001	0.012	ND	0.004
194		ND	ND	ND	0.003	0.047	ND	0.063	0.234	0.015	0.076
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201		ND	ND	ND	0.002	0.096	0.002	0.055	0.239	0.024	0.110
205		ND	ND	ND	ND	ND	ND	ND	0.005	ND	ND
206		ND	ND	ND	ND	0.018	ND	0.017	0.082	0.005	0.017
209		ND	ND	ND	ND	0.007	ND	ND	0.025	0.004	0.005
	Sum	0.023	0.016	0.026	0.058	1.508	0.028	1.404	3.461	0.517	1.425
	Paris 10	0.015	0.013	0.018	0.036	0.761	0.016	0.905	1.852	0.275	0.724

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2008.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)							
		16047	16049	16087	16089	16094	16099	16100	16101
<i>CF</i>		27.34	36.93	26.04	23.43	27.72	27.70	21.81	24.86
8		ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND
28		ND	0.005	ND	ND	0.002	0.001	ND	ND
29		ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	0.001	ND	ND	ND
52		0.002	0.004	0.004	0.002	0.003	0.002	ND	0.002
77	0.05	0.001	0.003	0.002	ND	0.010	0.005	ND	ND
81		ND	ND	ND	0.004	0.002	0.001	ND	ND
101		0.002	0.009	0.006	0.002	0.017	0.007	ND	ND
105	0.0001	0.003	0.013	0.005	0.003	0.011	0.005	ND	ND
114	0.0001	0.002	0.003	0.002	ND	0.016	0.002	ND	ND
118	0.00001	0.015	0.055	0.026	0.011	0.070	0.044	0.003	0.004
123	0.00001	ND	0.001	ND	ND	0.002	0.001	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND
128		0.006	0.023	0.008	0.004	0.042	0.027	0.002	0.002
138		0.034	0.101	0.039	0.014	0.191	0.119	0.006	0.009
141		0.002	0.005	0.004	ND	0.014	0.010	ND	ND
149		0.003	0.007	0.003	0.001	0.034	0.015	0.001	0.002
153		0.120	0.240	0.160	0.035	0.646	0.512	0.017	0.025
156	0.0001	0.009	0.018	0.011	0.003	0.045	0.028	ND	0.001
157	0.0001	ND	0.002	ND	ND	0.005	0.003	ND	ND
163		0.032	0.071	0.041	0.010	0.237	0.144	0.003	0.007
167	0.00001	0.004	0.005	0.005	0.002	0.013	0.011	ND	ND
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND
170		0.020	0.048	0.032	0.008	0.144	0.090	0.002	0.004
171		0.003	0.006	0.006	0.002	0.016	0.009	ND	0.002
180		0.082	0.192	0.163	0.026	0.540	0.354	0.010	0.015
183		0.009	0.028	0.021	0.004	0.081	0.045	ND	0.002
187		0.102	0.234	0.127	0.029	0.945	0.644	0.009	0.017
189	0.00001	0.002	0.002	0.003	ND	0.009	0.007	ND	ND
194		0.019	0.051	0.049	0.005	0.125	0.077	ND	0.002
199		ND	ND	ND	ND	ND	ND	ND	ND
201		0.026	0.085	0.062	0.008	0.241	0.164	0.003	0.005
205		ND	ND	ND	ND	0.004	0.003	ND	ND
206		0.006	0.021	0.013	0.003	0.049	0.025	ND	ND
209		0.006	0.007	0.007	0.005	0.038	0.021	ND	ND
	Sum	0.509	1.241	0.799	0.179	3.552	2.377	0.056	0.100
	Paris 10	0.266	0.636	0.414	0.094	1.525	1.073	0.035	0.060

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2009.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		16122	16132	16141	16142	16149	16150	16151	16154	16158	16173
<i>CF</i>		26.54	18.43	19.85	28.96	32.73	20.65	19.87	36.44	23.54	22.46
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28		ND	0.002	ND	0.002	ND	ND	0.004	0.003	ND	ND
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52		0.001	ND	ND	0.001	ND	0.001	0.007	0.002	ND	ND
77	0.05	0.009	0.009	ND	0.010	0.013	0.011	0.022	0.021	ND	ND
81	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
101		0.005	0.002	0.003	0.005	0.003	0.006	0.036	0.027	0.003	0.002
105	0.0001	ND	ND	0.009	0.012	ND	0.009	0.015	0.021	ND	ND
114	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
118	0.00001	0.016	0.008	0.014	0.035	0.013	0.024	0.077	0.117	0.011	0.005
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.010	0.004	0.006	0.011	0.007	0.013	0.038	0.063	0.006	0.003
138		0.030	0.016	0.019	0.034	0.026	0.045	0.173	0.224	0.020	0.009
141		0.005	ND	ND	0.003	ND	0.006	0.018	0.018	ND	ND
149		0.007	0.002	0.002	0.005	0.003	0.008	0.047	0.042	0.002	0.002
153		0.096	0.044	0.049	0.100	0.065	0.158	0.448	0.934	0.060	0.024
156	0.0001	0.008	ND	0.008	0.013	ND	0.015	0.027	0.068	0.010	ND
157	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
163		0.031	0.017	0.015	0.028	0.021	0.049	0.187	0.193	0.015	0.007
167	0.00001	ND	ND	ND	ND	ND	ND	0.010	0.028	ND	ND
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
170		0.022	0.010	0.011	0.020	0.014	0.036	0.089	0.237	0.015	ND
171		0.002	ND	ND	ND	ND	0.005	0.010	0.025	ND	ND
180		0.089	0.040	0.042	0.067	0.046	0.128	0.271	0.823	0.058	0.017
183		0.014	0.007	0.007	0.009	0.007	0.018	0.046	0.127	0.008	0.003
187		0.149	0.050	0.043	0.094	0.056	0.164	0.398	0.796	0.035	0.024
189	0.00001	ND	ND	ND	ND	ND	ND	ND	0.018	ND	ND
194		0.023	0.010	0.013	0.018	0.010	0.029	0.056	0.182	0.016	0.004
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201		0.045	0.014	0.016	0.026	0.012	0.044	0.096	0.266	0.013	0.005
205		ND	ND	ND	ND	ND	ND	ND	0.008	ND	ND
206		0.007	ND	ND	0.006	ND	0.006	0.019	0.047	ND	ND
209		0.004	ND	0.004	0.004	ND	0.006	0.036	0.043	ND	0.004
	Sum	0.573	0.237	0.259	0.501	0.296	0.780	2.128	4.333	0.270	0.109
	Paris 10	0.245	0.112	0.143	0.269	0.153	0.385	1.056	2.219	0.161	0.056

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2009.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)									
		16212	16227	16265	16269	16273	16277	16283	16284	16346	16349
<i>CF</i>		<i>43.67</i>	<i>54.64</i>	<i>18.70</i>	<i>28.74</i>	<i>33.90</i>	<i>14.97</i>	<i>40.32</i>	<i>25.47</i>	<i>27.27</i>	<i>80.00</i>
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	0.001	ND	ND	ND	ND	0.001
28		0.003	0.002	0.004	0.004	0.002	0.002	ND	ND	ND	0.002
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52		0.001	0.001	0.002	0.002	0.002	ND	ND	ND	ND	0.001
77	0.05	0.011	0.010	0.013	0.013	0.010	0.012	ND	ND	ND	ND
81		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
101		0.011	0.004	0.013	0.014	0.007	0.003	ND	ND	ND	0.004
105	0.0001	0.029	ND	0.013	0.019	0.008	ND	ND	ND	ND	ND
114	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
118	0.00001	0.091	0.011	0.039	0.050	0.028	0.010	0.005	0.004	ND	0.012
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.030	0.007	0.017	0.019	0.012	0.007	ND	ND	ND	0.008
138		0.111	0.024	0.054	0.064	0.037	0.026	0.006	0.004	0.004	0.027
141		0.008	ND	0.006	0.006	0.004	ND	ND	ND	ND	ND
149		0.010	0.003	0.008	0.006	0.005	0.003	ND	ND	ND	0.004
153		0.282	0.062	0.164	0.171	0.107	0.066	0.010	0.005	0.007	0.084
156	0.0001	0.030	0.009	0.020	0.023	0.016	0.008	ND	ND	ND	0.010
157	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
163		0.085	0.019	0.051	0.047	0.031	0.024	0.004	0.002	0.003	0.023
167	0.00001	0.012	ND	ND	0.009	ND	ND	ND	ND	ND	ND
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
170		0.070	0.012	0.040	0.046	0.017	0.014	ND	ND	ND	0.018
171		0.008	ND	0.005	0.004	0.002	ND	ND	ND	ND	ND
180		0.219	0.054	0.157	0.185	0.060	0.053	0.005	0.004	0.005	0.070
183		0.035	0.008	0.022	0.026	0.008	0.009	ND	ND	ND	0.010
187		0.160	0.052	0.181	0.113	0.058	0.060	0.006	0.004	0.007	0.052
189	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
194		0.052	0.013	0.040	0.060	0.015	0.013	ND	ND	ND	0.016
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201		0.064	0.014	0.060	0.045	0.017	0.015	ND	ND	ND	0.018
205		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
206		0.014	ND	0.011	0.011	ND	ND	ND	ND	ND	ND
209		0.016	ND	0.008	ND	ND	0.004	ND	ND	ND	0.003
	Sum	1.350	0.306	0.927	0.938	0.447	0.329	0.035	0.022	0.026	0.362
	Paris 10	0.776	0.167	0.465	0.532	0.266	0.169	0.026	0.016	0.016	0.209

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 3 contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2009.

	TEF	Liver PCB congener concentration in birds ($\mu\text{g/g}$ wet wt)							
		16352	16363	16377	16382	16400	16416	16553	16554
<i>CF</i>		84.03	42.37	44.64	22.69	24.37	64.94	24.27	36.10
8		ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND
28		0.003	0.002	0.003	ND	ND	0.003	0.002	ND
29		ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND
52		0.014	ND	0.002	ND	ND	0.001	0.001	ND
77	0.05	ND	ND	ND	0.010	ND	ND	0.010	ND
81		ND	ND	ND	ND	ND	ND	ND	ND
101		0.012	0.004	0.010	0.004	ND	0.010	0.007	0.002
105	0.0001	0.008	0.009	0.011	ND	ND	0.019	0.015	ND
114	0.0001	ND	ND	ND	ND	ND	ND	ND	ND
118	0.00001	0.017	0.015	0.029	0.015	0.008	0.070	0.063	0.007
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND
128		0.008	0.008	0.014	0.007	0.005	0.019	0.020	0.004
138		0.024	0.026	0.045	0.025	0.013	0.092	0.118	0.012
141		ND	ND	0.006	ND	ND	ND	0.005	ND
149		0.005	0.004	0.011	0.003	0.001	0.007	0.009	0.002
153		0.084	0.086	0.138	0.084	0.040	0.326	0.416	0.040
156	0.0001	0.009	0.010	0.013	0.009	ND	0.025	0.042	ND
157	0.0001	ND	ND	ND	ND	ND	ND	ND	ND
163		0.022	0.026	0.046	0.019	0.012	0.054	0.112	0.010
167	0.00001	ND	ND	ND	ND	ND	0.011	0.023	ND
169	0.001	ND	ND	ND	ND	ND	ND	ND	ND
170		0.015	0.017	0.036	0.019	ND	0.058	0.117	ND
171		ND	ND	0.003	ND	ND	0.007	0.015	ND
180		0.059	0.069	0.156	0.082	0.042	0.233	0.438	0.040
183		0.007	0.009	0.021	0.011	0.006	0.033	0.055	0.006
187		0.052	0.078	0.177	0.047	0.031	0.142	0.335	0.026
189	0.00001	ND	ND	ND	ND	ND	ND	0.009	ND
194		0.013	0.019	0.054	0.023	0.012	0.046	0.119	0.009
199		ND	ND	ND	ND	ND	ND	ND	ND
201		0.014	0.023	0.082	0.021	0.010	0.041	0.131	0.007
205		ND	ND	ND	ND	ND	ND	0.005	ND
206		ND	ND	0.033	ND	ND	0.006	0.024	ND
209		0.003	0.003	0.004	0.005	ND	0.003	0.023	ND
	Sum	0.366	0.406	0.895	0.384	0.178	1.207	2.114	0.166
	Paris 10	0.229	0.220	0.407	0.219	0.103	0.779	1.101	0.101

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2007.

	TEQ concentration in livers of birds (pg/g wet wt)									
	15460	15461	15499	15502	15511	15519	15523	15530	15540	15549
<i>CF</i>	26.30	23.74	16.75	23.79	27.25	31.25	34.46	33.06	19.20	21.60
77	ND	ND	ND	ND	95.40	ND	ND	ND	ND	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	5.479	5.490	0.383	4.137	0.289	3.251	0.540	4.273	0.318	0.536
114	1.654	2.000	0.256	2.943	ND	ND	ND	3.417	0.184	0.282
118	2.459	2.429	0.176	1.641	0.072	1.957	0.341	2.341	0.142	0.183
123	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.010
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	8.410	12.06	0.817	7.648	0.330	8.053	1.149	9.619	0.571	1.019
157	1.196	1.539	0.194	1.115	ND	1.068	0.250	1.215	ND	0.165
167	0.257	0.551	0.017	0.307	ND	0.244	0.020	0.323	0.007	0.027
169	ND	112.3	9.031	ND	ND	ND	ND	77.18	ND	ND
189	0.190	0.292	0.017	0.257	ND	0.238	0.012	0.306	ND	0.029
Sum	19.64	136.7	10.89	18.05	96.09	14.81	2.312	98.67	1.222	2.252

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2007.

	TEQ concentration in livers of birds (pg/g wet wt)									
	15565	15566	15567	15568	15569	15570	15571	15580	15588	15600
<i>CF</i>	25.13	33.91	21.46	19.51	29.71	23.42	21.15	30.52	29.67	28.47
77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	561.8	ND
105	0.087	ND	ND	0.424	0.604	ND	0.071	ND	4.893	0.176
114	ND	ND	ND	ND	ND	ND	ND	ND	0.872	ND
118	0.023	0.003	0.136	0.255	0.357	0.093	0.132	0.012	1.987	0.159
123	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	0.152	ND	0.695	1.977	2.166	0.354	0.584	ND	12.21	1.102
157	ND	ND	ND	ND	ND	ND	ND	ND	1.650	ND
167	ND	0.045	0.115	0.126	0.161	0.074	0.081	0.025	0.445	0.061
169	ND	ND	ND	ND	ND	ND	ND	ND	106.9	15.71
189	ND	ND	0.061	0.044	0.087	0.039	0.058	ND	0.303	0.050
Sum	0.263	0.048	1.007	2.826	3.374	0.560	0.926	0.037	691.1	17.26

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2007.

	TEQ concentration in livers of birds (pg/g wet wt)									
	15603	15607	15608	15609	15614	15621	15695	15720	15729	15745
<i>CF</i>	17.58	21.99	19.20	19.15	23.39	19.27	21.32	26.23	21.19	26.09
77	ND	ND	11.32	ND	ND	ND	ND	ND	ND	ND
81	ND	ND	53.83	41.02	ND	72.76	39.87	137.9	124.0	333.0
105	0.590	ND	0.207	0.109	1.076	0.045	0.009	2.087	1.077	2.248
114	0.158	ND	ND	ND	0.142	0.024	ND	1.268	0.564	0.010
118	0.339	0.022	0.073	0.036	0.331	0.017	0.009	0.634	0.488	0.695
123	ND	ND	0.008	0.007	0.017	0.008	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	2.345	ND	0.399	0.333	0.997	0.066	0.100	5.625	2.036	3.384
157	0.184	ND	ND	ND	0.126	0.010	0.013	0.759	0.256	0.347
167	0.091	0.025	ND	ND	0.021	ND	ND	0.306	0.054	0.112
169	6.615	7.806	ND	ND	4.137	ND	ND	104.7	28.27	48.67
189	0.072	0.019	ND	0.009	0.019	ND	ND	0.221	ND	0.095
Sum	10.39	7.872	65.84	41.52	6.867	72.93	40.00	253.5	156.7	388.6

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)									
	15784	15809	15812	15849	15865	15870	15871	15883	15913	15940
<i>CF</i>	16.85	34.41	26.12	23.65	25.03	17.84	31.64	42.67	26.89	28.68
77	ND	ND	ND	ND	ND	ND	26.52	ND	ND	ND
81	ND	ND	188.6	ND	ND	ND	ND	ND	ND	ND
105	2.374	4.652	2.028	0.233	0.400	1.239	0.668	ND	0.354	0.170
114	ND	ND	ND	ND	ND	ND	0.455	ND	0.549	ND
118	0.791	1.878	0.753	0.108	0.118	0.361	0.464	0.094	0.246	0.063
123	0.025	0.071	0.032	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	3.625	8.291	3.398	0.443	0.434	1.069	2.666	0.263	1.408	0.322
157	0.598	1.232	0.587	0.075	ND	0.220	0.402	ND	ND	ND
167	0.126	0.302	0.110	0.008	0.014	0.033	0.086	ND	0.027	0.004
169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
189	0.065	0.163	0.069	ND	ND	0.011	0.026	ND	0.012	ND
Sum	7.606	16.59	195.6	0.868	0.966	2.933	31.28	0.357	2.595	0.560

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)									
	15948	15958	15964	15967	15981	15982	16033	16034	16037	16040
<i>CF</i>	33.43	28.69	32.83	29.88	41.55	29.52	45.76	22.94	27.66	25.60
77	ND	ND	ND	ND	ND	ND	ND	193.8	115.7	147.2
81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	ND	ND	ND	ND	0.999	ND	4.158	1.459	0.643	0.666
114	ND	ND	ND	ND	0.719	ND	ND	0.896	0.258	0.461
118	0.001	0.002	0.006	0.018	0.555	0.004	1.315	0.801	0.266	0.449
123	ND	ND	ND	ND	0.007	ND	ND	0.018	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	ND	ND	ND	ND	2.067	ND	3.533	4.906	0.723	1.981
157	ND	ND	ND	ND	0.258	ND	0.357	0.520	ND	0.237
167	ND	ND	ND	ND	0.067	ND	0.113	0.155	0.028	0.081
169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
189	ND	ND	ND	ND	0.035	ND	0.009	0.115	ND	0.043
Sum	0.001	0.002	0.006	0.018	4.707	0.004	9.485	202.7	117.7	151.2

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)								
	16047	16049	16087	16089	16094	16099	16100	16101	
<i>CF</i>	27.34	36.93	26.04	23.43	27.72	27.70	21.81	24.86	
77	72.44	147.4	122.0	ND	494.4	253.8	ND	ND	
81	ND	ND	ND	403.1	210.5	80.34	ND	ND	
105	0.284	1.276	0.472	0.269	1.135	0.526	ND	ND	
114	0.206	0.342	0.190	ND	1.569	0.241	ND	ND	
118	0.154	0.552	0.259	0.110	0.697	0.444	0.026	0.043	
123	ND	0.013	ND	ND	0.021	0.014	ND	ND	
126	ND	ND	ND	ND	ND	ND	ND	ND	
156	0.851	1.841	1.119	0.256	4.506	2.775	ND	0.137	
157	ND	0.220	ND	ND	0.464	0.310	ND	ND	
167	0.038	0.054	0.045	0.015	0.128	0.106	ND	ND	
169	ND	ND	ND	0.00	0.00	ND	ND	ND	
189	0.020	0.022	0.026	ND	0.090	0.070	ND	ND	
Sum	73.99	151.7	124.1	403.7	713.5	338.6	0.026	0.180	

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2009.

	TEQ concentration in livers of birds (pg/g wet wt)									
	16122	16132	16141	16142	16149	16150	16151	16154	16158	16173
<i>CF</i>	26.54	18.43	19.85	28.96	32.73	20.65	19.87	36.44	23.54	22.46
77	454.8	438.7	ND	482.6	627.8	560.2	1104	1071	ND	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	ND	ND	0.856	1.163	ND	0.886	1.494	2.104	ND	ND
114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
118	0.156	0.082	0.144	0.355	0.129	0.239	0.766	1.167	0.106	0.046
123	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	0.800	ND	0.771	1.306	ND	1.518	2.672	6.775	0.951	ND
157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
167	ND	ND	ND	ND	ND	ND	0.096	0.285	ND	ND
169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
189	ND	ND	ND	ND	ND	ND	ND	0.176	ND	ND
Sum	455.8	438.8	1.77	485.4	627.9	562.8	1109	1082	1.06	0.05

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the livers of sparrowhawks received in 2009.

	TEQ concentration in livers of birds (pg/g wet wt)									
	16212	16227	16265	16269	16273	16277	16283	16284	16346	16349
<i>CF</i>	43.67	54.64	18.70	28.74	33.90	14.97	40.32	25.47	27.27	80.00
77	562.8	502.3	631.2	653.1	493.3	576.1	ND	ND	ND	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	2.869	ND	1.261	1.901	0.833	ND	ND	ND	ND	ND
114	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
118	0.911	0.109	0.390	0.505	0.277	0.099	0.052	0.036	ND	0.118
123	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	3.047	0.866	1.981	2.350	1.563	0.805	ND	ND	ND	1.003
157	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
167	0.123	ND	ND	0.089	ND	ND	ND	ND	ND	ND
169	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
189	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sum	569.7	503.2	634.8	657.9	496.0	577.0	0.05	0.04	ND	1.12

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 4 contd.

**Congener specific and sum TEQ concentrations (pg/g wet wt)
in the livers of sparrowhawks received in 2009.**

	TEQ concentration in livers of birds (pg/g wet wt)							
	16352	16363	16377	16382	16400	16416	16553	16554
<i>CF</i>	<i>84.03</i>	<i>42.37</i>	<i>44.64</i>	<i>22.69</i>	<i>24.37</i>	<i>64.94</i>	<i>24.27</i>	<i>36.10</i>
77	ND	ND	ND	520.4	ND	ND	480.5	ND
81	ND	ND	ND	ND	ND	ND	ND	ND
105	0.847	0.908	1.089	ND	ND	1.918	1.493	ND
114	ND	ND	ND	ND	ND	ND	ND	ND
118	0.174	0.149	0.294	0.151	0.078	0.696	0.627	0.071
123	ND	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND
156	0.862	0.980	1.346	0.917	ND	2.489	4.177	ND
157	ND	ND	ND	ND	ND	ND	ND	ND
167	ND	ND	ND	ND	ND	0.110	0.225	ND
169	ND	ND	ND	ND	ND	ND	ND	ND
189	ND	ND	ND	ND	ND	ND	0.095	ND
Sum	1.88	2.04	2.73	521.5	0.08	5.21	487.1	0.07

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 5. Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the livers of sparrowhawks received in 2007

Bird No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
		HCB	a-HCCH	g-HCCH	HEOD	DDE	DDT	TDE
15460	26.30	0.106	0.002	0.088	0.589	13.60	0.003	0.200
15461	23.74	0.059	0.001	0.059	0.300	6.340	0.002	0.075
15499	16.75	ND	ND	ND	ND	ND	ND	ND
15502	23.79	0.072	ND	ND	0.913	40.10	0.006	0.301
15511	27.25	0.010	ND	ND	0.220	2.254	ND	0.017
15519	31.25	0.216	0.004	ND	1.510	24.62	ND	0.074
15523	34.46	0.014	ND	ND	0.213	2.015	ND	0.015
15530	33.06	0.102	0.001	0.111	2.243	105.3	ND	1.533
15540	19.20	0.024	ND	0.001	0.216	1.516	ND	0.082
15549	21.60	0.012	ND	ND	0.072	0.952	ND	0.032
15565	25.13	0.002	ND	0.003	0.099	0.153	ND	ND
15566	33.91	0.003	ND	ND	0.068	0.125	ND	0.008
15567	21.46	0.011	ND	ND	0.136	2.851	0.004	0.023
15568	19.51	0.008	ND	ND	0.556	1.882	ND	0.028
15569	29.71	0.025	ND	ND	0.089	1.338	ND	0.022
15570	23.42	0.008	ND	ND	0.029	0.579	ND	0.015
15571	21.15	0.009	ND	ND	0.068	0.624	ND	0.008
15580	30.52	0.003	ND	ND	0.019	0.027	0.001	0.002
15588	29.67	0.154	0.032	0.030	14.11	17.14	0.029	0.350
15600	28.47	0.023	0.001	ND	0.151	0.912	ND	0.021
15603	17.58	0.008	0.003	ND	0.425	1.919	ND	0.043
15607	21.99	0.007	0.003	ND	0.109	0.505	ND	0.010
15608	19.20	0.001	ND	ND	0.060	0.193	ND	0.008
15609	19.15	0.012	ND	ND	0.103	0.361	ND	0.012
15614	23.39	0.023	ND	ND	2.541	1.096	ND	0.062
15621	19.27	0.001	ND	ND	0.022	0.270	ND	0.003
15695	21.32	ND	ND	ND	0.063	0.094	0.001	0.005
15720	26.23	0.010	ND	ND	0.271	1.890	ND	0.012
15729	21.19	0.015	0.001	ND	1.321	21.27	ND	0.148
15745	26.09	0.061	0.002	ND	0.079	1.183	ND	0.019

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 5. contd.

Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the livers of received in 2008.

Bird No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
		HCB	a- HCCH	g- HCCH	HEOD	DDE	DDT	TDE
15784	16.85	0.131	ND	0.025	0.344	22.67	0.008	0.392
15809	34.41	0.147	ND	0.036	3.228	7.177	0.010	0.220
15812	26.12	0.110	ND	0.046	0.443	15.97	ND	0.308
15849	23.65	0.021	ND	0.010	0.106	0.751	ND	0.021
15865	25.03	0.024	0.001	0.016	0.089	6.942	ND	0.095
15870	17.84	0.034	ND	0.006	0.105	0.669	0.018	0.041
15871	31.64	0.117	ND	0.064	0.250	9.478	ND	0.129
15883	42.67	0.009	ND	ND	0.101	1.024	ND	0.008
15913	26.89	0.173	ND	ND	0.237	5.103	ND	0.070
15940	28.68	0.008	ND	0.021	0.071	0.562	ND	0.006
15948	33.43	0.003	ND	ND	0.012	0.302	ND	0.003
15958	28.69	0.006	ND	ND	0.011	0.127	ND	ND
15964	32.83	ND	ND	ND	0.018	0.198	ND	0.003
15967	29.88	0.002	ND	ND	0.048	0.135	ND	0.003
15981	41.55	0.081	ND	ND	0.103	2.211	ND	0.020
15982	29.52	ND	ND	ND	0.010	0.514	ND	0.003
16033	45.76	0.022	ND	ND	0.066	2.625	ND	0.015
16034	22.94	0.124	ND	0.015	0.584	15.85	ND	0.061
16037	27.66	0.012	ND	0.076	0.081	2.446	ND	0.017
16040	25.60	0.008	ND	0.002	0.158	1.712	ND	0.009
16047	27.34	0.006	ND	0.003	0.034	0.604	ND	0.004
16049	36.93	0.040	ND	0.010	0.134	2.598	ND	0.038
16087	26.04	0.006	ND	0.006	0.063	1.274	ND	0.009
16089	23.43	0.008	ND	0.091	0.079	0.124	ND	0.002
16094	27.72	0.034	ND	0.008	0.368	9.480	ND	0.038
16099	27.70	0.013	ND	0.015	0.168	4.923	ND	0.089
16100	21.81	0.008	ND	0.004	0.024	0.338	ND	0.005
16101	24.86	0.005	ND	ND	0.010	0.420	ND	0.004

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 5. contd.

Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the livers of received in 2009.

Bird No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
		HCB	a-HCCH	g-HCCH	HEOD	DDE	DDT	TDE
16122	26.54	0.036	ND	0.011	0.069	0.953	ND	0.025
16132	18.43	0.016	ND	0.021	0.269	1.468	ND	0.017
16141	19.85	0.052	ND	0.074	0.230	0.598	ND	ND
16142	28.96	0.033	ND	0.025	0.719	1.125	ND	ND
16149	32.73	0.092	ND	0.075	ND	3.443	ND	0.371
16150	20.65	0.048	ND	0.030	0.227	3.411	ND	0.033
16151	19.87	0.162	ND	0.049	1.861	8.866	ND	0.286
16154	36.44	0.142	ND	0.032	0.449	10.38	ND	0.406
16158	23.54	0.022	ND	0.017	0.096	2.958	ND	0.384
16173	22.46	0.016	ND	0.017	0.409	6.301	ND	0.093
16212	43.67	0.043	ND	0.059	0.386	1.817	ND	0.052
16227	54.64	0.041	ND	ND	ND	0.500	ND	ND
16265	18.70	0.010	ND	0.053	0.116	6.439	ND	0.042
16269	28.74	0.018	ND	0.068	0.529	3.702	ND	0.064
16273	33.90	0.024	ND	ND	0.078	0.426	ND	ND
16277	14.97	0.006	ND	0.031	0.127	1.420	ND	ND
16283	40.32	0.006	ND	ND	ND	0.111	ND	ND
16284	25.47	0.009	ND	0.013	0.074	0.125	ND	ND
16346	27.27	ND	ND	ND	ND	0.481	ND	ND
16349	80.00	0.007	ND	0.044	0.079	0.750	ND	ND
16352	84.03	0.018	ND	ND	0.073	0.593	ND	ND
16363	42.37	0.007	ND	ND	0.103	1.435	ND	ND
16377	44.64	0.081	ND	0.020	0.123	1.997	ND	0.053
16382	22.69	0.010	ND	0.024	0.133	3.497	ND	0.035
16400	24.37	0.005	ND	0.029	ND	1.025	ND	ND
16416	64.94	0.050	ND	0.056	0.092	4.665	ND	ND
16553	24.27	0.043	0.008	0.832	2.445	15.39	ND	0.236
16554	36.10	0.011	ND	0.027	0.096	2.267	ND	0.184

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Tables for Predatory Bird Eggs

Table 6. Provenance data of gannet eggs received during 2007 & 2009.

Species	Egg No.	Year Collected	Location
gannet	E9072	2007	Ailsa Craig
gannet	E9073	2007	Ailsa Craig
gannet	E9074	2007	Ailsa Craig
gannet	E9075	2007	Ailsa Craig
gannet	E9076	2007	Ailsa Craig
gannet	E9077	2007	Ailsa Craig
gannet	E9080	2007	Ailsa Craig
gannet	E9081	2007	Ailsa Craig
gannet	E9082	2007	Ailsa Craig
gannet	E9083	2007	Ailsa Craig
gannet	E9408	2009	Ailsa Craig
gannet	E9409	2009	Ailsa Craig
gannet	E9410	2009	Ailsa Craig
gannet	E9411	2009	Ailsa Craig
gannet	E9412	2009	Ailsa Craig
gannet	E9413	2009	Ailsa Craig
gannet	E9414	2009	Ailsa Craig
gannet	E9415	2009	Ailsa Craig
gannet	E9416	2009	Ailsa Craig
gannet	E9417	2009	Ailsa Craig

Table 6. contd. Provenance data of predatory bird eggs collected during 2007 & 2008.

Species	Egg No.	Year Collected	Location
merlin	E9015	2007	Yorkshire
merlin	E9016	2007	Yorkshire
merlin	E9017	2007	Yorkshire
merlin	E9018	2007	Yorkshire
merlin	E9045	2007	Orkney
merlin	E9046	2007	Orkney
merlin	E9047	2007	Orkney
merlin	E9062	2007	Derbyshire
merlin	E9086	2007	Orkney
merlin	E9143	2008	Orkney
merlin	E9146	2008	Isle of Rum
merlin	E9147	2008	Peebleshire
merlin	E9200	2008	Yorkshire
merlin	E9237	2008	Orkney
merlin	E9238	2008	Orkney
merlin	E9239	2008	Orkney
merlin	E9293	2008	Yorkshire
merlin	E9295	2008	Yorkshire
merlin	E9298	2008	Yorkshire
merlin	E9302	2008	Pentland Hills
merlin	E9340	2008	Orkney
golden eagle	E8996	2007	Isle of Rum
golden eagle	E9001	2007	Argyll
golden eagle	E9002	2007	Inverness-shire
golden eagle	E9020	2007	Argyll
golden eagle	E9022	2007	Argyll
golden eagle	E9171	2008	Inverness-shire
golden eagle	E9175	2008	Isle of Skye
golden eagle	E9176	2008	Isle of Skye
golden eagle	E9209	2008	Argyll
golden eagle	E9210	2008	Argyll
golden eagle	E9212	2008	Argyll
golden eagle	E9260	2008	Peebleshire
golden eagle	E9262	2008	Perthshire
golden eagle	E9264	2008	North Uist
golden eagle	E9265	2008	North Uist
golden eagle	E9266	2008	North Uist
golden eagle	E9267	2008	South Uist
golden eagle	E9315	2007	Borders
golden eagle	E9316	2007	Borders
golden eagle	E9317	2007	Benbecula
sea eagle	E9012	2008	Isle of Rum

Table 7. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of merlin eggs collected in 2007.

	TEF	PCB congener concentration in egg contents ($\mu\text{g/g}$ wet wt)								
		E9015	E9016	E9017	E9018	E9045	E9046	E9047	E9062	E9086
<i>CF</i>		<i>13.29</i>	<i>15.20</i>	<i>12.84</i>	<i>20.05</i>	<i>11.98</i>	<i>13.03</i>	<i>17.93</i>	<i>13.12</i>	<i>16.08</i>
8		ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND
28		0.002	0.001	0.002	0.001	ND	ND	0.001	0.001	ND
29		ND	ND	ND	0.001	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND
52		0.001	ND	ND	ND	ND	ND	ND	ND	ND
77	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND
81		ND	ND	ND	ND	ND	ND	ND	ND	ND
101		0.001	ND	0.001	0.002	ND	ND	ND	ND	ND
105	0.0001	0.009	0.007	0.010	0.010	0.005	0.004	0.015	0.011	0.004
114	0.0001	ND	0.002	0.003	0.002	ND	ND	ND	ND	ND
118	0.00001	0.029	0.027	0.044	0.033	0.023	0.017	0.067	0.044	0.013
123	0.00001	0.001	ND	ND	ND	0.001	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.011	0.009	0.015	0.008	0.004	0.005	0.018	0.018	0.005
138		0.046	0.041	0.068	0.036	0.018	0.022	0.100	0.078	0.017
141		ND	ND	ND	0.001	ND	ND	ND	ND	ND
149		0.002	0.001	0.002	0.002	ND	ND	ND	0.004	ND
153		0.140	0.129	0.197	0.117	0.092	0.088	0.444	0.198	0.077
156	0.0001	0.013	0.010	0.014	0.011	0.010	0.006	0.029	0.015	0.006
157	0.0001	0.003	ND	ND	0.002	ND	0.001	0.004	0.003	ND
163		0.025	0.024	0.038	0.039	0.023	0.012	0.041	0.065	0.011
167	0.00001	0.005	0.004	0.006	0.004	0.003	0.001	0.016	0.005	ND
169	0.001	0.010	ND	ND	0.009	0.005	ND	0.038	0.011	0.005
170		0.025	0.021	0.035	0.021	0.017	0.012	0.075	0.032	0.010
171		0.004	0.003	0.005	0.003	0.002	0.002	0.008	0.005	0.002
180		0.084	0.071	0.114	0.062	0.048	0.037	0.339	0.093	0.030
183		0.016	0.014	0.021	0.013	0.008	0.008	0.053	0.019	0.008
187		0.058	0.049	0.077	0.064	0.033	0.021	0.076	0.115	0.024
189	0.00001	0.004	0.003	0.004	0.003	0.003	0.002	0.011	0.004	0.002
194		0.023	0.020	0.032	0.024	0.017	0.015	0.107	0.024	0.019
199		ND	ND	ND	ND	ND	ND	ND	ND	0.000
201		0.022	0.021	0.034	0.027	0.014	0.009	0.048	0.030	0.009
205		0.001	ND	ND	0.001	ND	ND	0.003	ND	ND
206		0.012	0.010	0.016	0.011	0.005	0.004	0.025	0.009	0.005
209		0.014	0.013	0.017	0.010	0.006	0.004	0.013	0.011	0.005
	Sum	0.481	0.756	0.518	0.338	0.268	1.532	0.792	0.251	5.294
	Paris 10	0.286	0.450	0.273	0.197	0.174	0.995	0.439	0.147	3.502

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of merlin eggs collected in 2008.

TEF		PCB congener concentrations in eggs ($\mu\text{g/g}$ wet wt)					
		E9143	E9146	E9147	E9293	E9295	E9298
<i>CF</i>		<i>13.51</i>	<i>13.65</i>	<i>26.96</i>	<i>12.87</i>	<i>2.69</i>	<i>13.87</i>
8		ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND
28		0.002	0.002	0.002	0.002	0.002	0.002
29		ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND
52		ND	0.001	ND	ND	ND	ND
77	0.05	ND	ND	ND	ND	0.004	ND
81	0.1	ND	ND	ND	ND	ND	ND
101		ND	0.001	ND	ND	0.002	ND
105	0.0001	0.005	0.008	0.014	0.007	0.014	0.010
114	0.0001	ND	ND	ND	ND	0.008	ND
118	0.00001	0.021	0.036	0.065	0.027	0.070	0.041
123	0.00001	ND	ND	0.002	ND	0.002	ND
126	0.1	ND	ND	ND	ND	ND	ND
128		0.005	0.009	0.014	0.007	0.016	0.014
138		0.026	0.054	0.076	0.038	0.101	0.076
141		ND	ND	ND	ND	ND	ND
149		ND	ND	0.001	ND	0.009	0.002
153		0.118	0.226	0.293	0.147	0.310	0.233
156	0.0001	0.008	0.017	0.024	0.010	0.023	0.017
157	0.0001	ND	0.002	0.004	0.001	0.003	0.002
163		0.016	0.028	0.047	0.029	0.070	0.043
167	0.00001	0.005	0.010	0.015	0.005	0.013	0.007
169	0.001	0.009	0.018	ND	0.011	ND	ND
170		0.019	0.037	0.056	0.023	0.054	0.034
171		0.002	0.005	0.007	0.003	0.007	0.005
180		0.060	0.128	0.161	0.081	0.179	0.115
183		0.010	0.018	0.026	0.014	0.031	0.022
187		0.025	0.057	0.102	0.059	0.159	0.085
189	0.00001	0.001	0.004	0.005	0.001	0.004	0.002
194		0.020	0.041	0.051	0.028	0.054	0.028
199		ND	ND	ND	ND	ND	ND
201		0.012	0.024	0.041	0.024	0.057	0.028
205		ND	0.002	0.003	0.001	0.003	0.002
206		0.006	0.013	0.015	0.011	0.020	0.010
209		0.005	0.010	0.010	0.016	0.019	0.011
	Sum	0.375	0.749	1.031	0.546	1.233	0.791
	Paris 10	0.240	0.472	0.635	0.311	0.701	0.495

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of merlin eggs collected in 2008.

TEF		PCB congener concentrations in eggs ($\mu\text{g/g}$ wet wt)					
		E9200	E9237	E9238	E9239	E9302	E9340
<i>CF</i>		<i>12.92</i>	<i>12.62</i>	<i>12.29</i>	<i>14.75</i>	<i>16.67</i>	<i>11.41</i>
8		ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND
28		0.003	0.002	0.002	ND	0.002	0.001
29		ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND
52		ND	ND	ND	ND	ND	ND
77	0.05	0.001	ND	ND	ND	ND	ND
81	0.1	ND	ND	ND	ND	ND	ND
101		0.002	0.001	ND	0.001	0.001	ND
105	0.0001	0.012	0.010	0.008	0.013	0.012	0.010
114	0.0001	ND	ND	ND	ND	ND	ND
118	0.00001	0.044	0.033	0.026	0.048	0.049	0.032
123	0.00001	ND	0.001	0.001	0.001	0.001	ND
126	0.1	ND	ND	ND	ND	ND	ND
128		0.085	0.008	0.006	0.013	0.011	0.006
138		0.406	0.046	0.033	0.066	0.065	0.030
141		ND	ND	ND	ND	ND	ND
149		0.002	0.001	ND	0.001	ND	ND
153		1.235	0.155	0.114	0.249	0.244	0.112
156	0.0001	0.099	0.013	0.010	0.020	0.020	0.010
157	0.0001	0.013	0.001	0.002	0.003	0.003	0.002
163		0.245	0.033	0.022	0.037	0.031	0.024
167	0.00001	0.049	0.006	0.005	0.013	0.011	0.004
169	0.001	ND	ND	ND	ND	0.019	0.007
170		0.027	0.027	0.018	0.053	0.043	0.018
171		0.028	0.004	0.003	0.006	0.005	0.002
180		0.095	0.087	0.052	0.161	0.148	0.053
183		0.128	0.014	0.010	0.023	0.021	0.009
187		0.554	0.078	0.041	0.077	0.062	0.040
189	0.00001	0.002	0.002	0.001	0.005	0.004	0.001
194		0.031	0.028	0.018	0.054	0.042	0.016
199		ND	ND	ND	ND	ND	ND
201		0.027	0.024	0.016	0.035	0.025	0.015
205		0.002	0.002	ND	0.003	0.002	0.001
206		0.013	0.009	0.005	0.017	0.011	0.006
209		0.010	0.012	0.010	0.012	0.009	0.006
	Sum	0.838	3.113	0.595	0.404	0.912	0.838
	Paris 10	0.540	1.896	0.346	0.245	0.558	0.540

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of golden eagle and sea eagles collected in 2007

	TEF	PCB congener concentration in egg contents ($\mu\text{g/g}$ wet wt)					
		golden eagle					sea eagle
		E8996	E9001	E9002	E9020	E9022	E9012
<i>CF</i>		16.07	14.97	16.87	10.26	19.95	13.29
8		ND	ND	ND	ND	ND	0.000
18		ND	ND	ND	ND	ND	0.000
28		0.002	0.005	ND	ND	ND	0.012
29		ND	ND	ND	ND	ND	0.000
31		0.001	ND	ND	ND	ND	0.001
52		0.004	0.009	ND	ND	ND	0.004
77	0.05	ND	ND	ND	ND	ND	0.000
81		ND	0.004	ND	ND	ND	0.001
101		0.008	0.036	ND	ND	ND	0.049
105	0.0001	0.020	0.068	ND	ND	ND	0.396
114	0.0001	0.010	ND	ND	ND	ND	0.059
118	0.00001	0.090	0.262	0.001	0.006	0.002	2.054
123	0.00001	ND	ND	ND	ND	ND	0.000
126	0.1	ND	ND	ND	ND	ND	0.000
128		0.037	0.099	ND	ND	ND	0.812
138		0.007	0.655	0.001	0.011	0.002	7.524
141		ND	0.007	ND	ND	ND	0.022
149		0.009	0.034	ND	ND	ND	0.048
153		0.999	1.483	0.007	0.081	0.021	22.25
156	0.0001	0.033	0.075	ND	0.005	0.001	0.887
157	0.0001	0.006	0.013	ND	ND	ND	0.173
163		0.100	0.285	0.001	0.012	0.004	4.766
167	0.00001	0.017	0.038	ND	0.003	ND	0.639
169	0.001	0.022	0.032	ND	ND	ND	0.000
170		0.132	0.265	0.001	0.013	0.003	2.985
171		0.018	0.034	ND	0.001	ND	0.296
180		0.638	0.909	0.007	0.070	0.014	13.00
183		0.103	0.160	ND	0.009	0.002	2.104
187		0.175	0.466	0.002	0.007	0.003	0.991
189	0.00001	0.009	0.017	ND	0.002	ND	0.112
194		0.105	0.162	0.002	0.016	0.004	1.682
199		ND	ND	ND	ND	ND	0.000
201		0.062	0.126	0.001	0.002	0.001	0.140
205		0.002	0.003	ND	ND	ND	0.012
206		0.018	0.032	ND	ND	ND	0.158
209		0.004	0.014	0.001	0.001	0.001	0.072
	Sum	2.629	0.024	0.058	0.024	0.238	61.26
	Paris 10	1.801	0.016	0.039	0.016	0.173	46.18

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of golden eagle eggs collected in 2008.

	TEF	PCB congener concentration in egg contents ($\mu\text{g/g}$ wet wt)								
		E9171	E9175	E9176	E9209	E9210	E9212	E9260	E9262	E9264
<i>CF</i>		17.94	16.21	22.66	15.07	12.68	14.86	19.37	20.53	55.25
8		ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND
28		ND	ND	ND	ND	ND	ND	ND	ND	ND
29		ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND
52		ND	ND	ND	ND	ND	ND	ND	ND	ND
77	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND
81		ND	ND	ND	ND	ND	ND	ND	ND	ND
101		ND	ND	ND	ND	ND	ND	0.001	0.001	0.001
105	0.0001	0.001	0.002	0.002	0.004	0.003	0.002	0.001	0.001	0.016
114	0.0001	ND	ND	ND	ND	ND	ND	0.001	ND	0.002
118	0.00001	0.001	0.008	0.005	0.015	0.010	0.013	0.002	0.001	0.107
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.001	0.002	0.002	0.005	0.002	0.002	0.001	ND	0.023
138		0.001	0.012	0.007	0.032	0.010	0.020	0.002	0.001	0.126
141		ND	ND	ND	ND	ND	ND	ND	ND	0.001
149		0.001	0.001	ND	ND	ND	ND	ND	0.001	0.002
153		0.003	0.055	0.035	0.121	0.034	0.082	0.011	0.004	0.539
156	0.0001	0.001	0.005	0.002	0.006	0.003	0.004	0.002	0.001	0.029
157	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	0.005
163		0.001	0.008	0.005	0.016	0.010	0.006	0.002	0.001	0.008
167	0.00001	ND	0.003	0.001	0.002	0.001	0.002	ND	ND	0.019
169	0.001	ND	ND	ND	ND	ND	0.004	ND	ND	ND
170		0.001	0.013	0.008	0.021	0.006	0.014	0.003	0.001	0.103
171		0.001	0.002	0.002	0.003	0.001	0.002	ND	0.001	0.009
180		0.004	0.065	0.041	0.063	0.020	0.054	0.011	0.008	0.467
183		0.001	0.009	0.005	0.008	0.003	0.007	0.002	0.001	0.061
187		0.001	0.015	0.009	0.016	0.015	0.011	0.002	0.001	0.013
189	0.00001	ND	0.002	ND	ND	ND	ND	ND	ND	0.008
194		0.002	0.072	0.203	0.014	0.006	0.012	0.013	0.222	0.007
199		ND	ND	ND	ND	ND	ND	ND	ND	ND
201		0.001	0.007	0.005	0.007	0.006	0.004	ND	0.001	0.006
205		ND	ND	ND	ND	ND	ND	ND	ND	0.001
206		0.001	0.002	0.001	0.003	0.002	0.003	ND	ND	0.012
209		ND	ND	ND	0.002	0.002	0.002	ND	ND	0.001
	Sum	0.020	0.283	0.334	0.054	0.338	0.133	0.245	0.054	0.245
	Paris 10	0.010	0.147	0.092	0.030	0.242	0.079	0.175	0.030	0.016

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of golden eagle collected in 2008.

TEF	PCB congener concentration in egg contents ($\mu\text{g/g}$ wet wt)					
	golden eagle					
	E9265	E9266	E9267	E9315*	E9316*	E9317*
<i>CF</i>	<i>17.84</i>	<i>49.71</i>	<i>37.59</i>	<i>85.92</i>	<i>61.07</i>	<i>14.80</i>
8	ND	ND	ND	ND	ND	ND
18	ND	ND	ND	ND	ND	ND
28	ND	ND	ND	ND	ND	0.001
29	ND	ND	ND	ND	ND	ND
31	ND	ND	ND	ND	ND	ND
52	ND	ND	ND	ND	ND	ND
77	0.05	ND	ND	ND	ND	0.001
81	ND	ND	ND	ND	ND	ND
101	0.002	0.002	ND	ND	ND	0.001
105	0.0001	0.010	0.001	0.002	ND	0.001
114	0.0001	0.001	ND	ND	ND	ND
118	0.00001	0.047	0.003	0.007	0.001	0.001
123	0.00001	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND
128	0.014	0.001	0.004	ND	ND	0.009
138	0.071	0.006	0.024	0.001	0.001	0.064
141	ND	ND	ND	ND	ND	ND
149	0.002	0.001	ND	ND	ND	0.001
153	0.283	0.022	0.097	0.005	0.005	0.220
156	0.0001	0.014	0.003	0.006	ND	0.013
157	0.0001	0.003	ND	ND	ND	ND
163	0.017	0.003	0.011	0.001	0.001	0.027
167	0.00001	0.008	ND	0.002	ND	0.005
169	0.001	ND	ND	ND	ND	0.012
170	0.051	0.005	0.019	0.002	0.001	0.037
171	0.005	0.001	0.003	ND	0.001	0.008
180	0.201	0.018	0.079	0.005	0.004	0.163
183	0.030	0.003	0.015	0.001	0.001	0.025
187	0.029	0.005	0.020	0.001	0.001	0.052
189	0.00001	0.004	0.001	0.001	ND	0.003
194	0.033	0.002	0.145	0.348	0.009	0.034
199	ND	ND	ND	ND	ND	ND
201	0.011	0.001	0.008	ND	ND	0.020
205	0.001	ND	ND	ND	ND	ND
206	0.007	ND	0.002	ND	ND	0.006
209	ND	ND	ND	ND	ND	0.003
Sum	0.026	0.844	0.079	0.366	0.026	0.445
Paris 10	0.012	0.629	0.055	0.012	0.012	0.216

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

* Eggs collected in 2007

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of gannet eggs collected from Ailsa Craig in 2007.

	TEF	PCB congener concentrations in eggs ($\mu\text{g/g}$ wet wt)									
		E9072	E9073	E9074	E9075	E9076	E9077	E9080	E9081	E9082	E9083
<i>CF</i>		17.43	14.30	16.89	13.76	15.34	18.55	19.41	15.15	11.83	17.74
8		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
18		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
28		0.002	0.001	0.001	0.001	0.002	0.001	0.002	0.002	0.001	0.001
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		0.001	ND	ND	ND	0.001	0.001	0.001	0.001	ND	ND
52		0.001	ND	ND	0.002	ND	ND	0.001	0.002	0.001	0.001
77	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
81	0.1	ND	ND	ND	ND	ND	ND	0.001	ND	ND	ND
101		0.004	0.001	ND	0.002	0.003	0.002	0.003	0.004	0.001	0.001
105	0.0001	0.017	0.007	0.008	0.006	0.015	0.006	0.008	0.013	0.006	0.006
114	0.0001	0.003	ND	0.001	ND	ND	ND	ND	ND	0.001	ND
118	0.00001	0.049	0.023	0.026	0.020	0.040	0.020	0.028	0.036	0.019	0.019
123	0.00001	ND	ND	ND	0.003	ND	ND	ND	ND	ND	ND
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.027	0.013	0.014	0.012	0.023	0.011	0.014	0.020	0.010	0.009
138		0.114	0.050	0.050	0.029	0.092	0.037	0.055	0.076	0.034	0.033
141		0.003	0.001	ND	ND	0.002	ND	ND	0.002	0.001	ND
149		0.017	0.006	0.004	0.008	0.012	0.005	0.008	0.011	0.004	0.004
153		0.276	0.128	0.128	0.110	0.245	0.096	0.140	0.192	0.094	0.090
156	0.0001	0.012	0.006	0.007	0.005	0.012	0.005	0.007	0.008	0.005	0.005
157	0.0001	0.002	0.001	0.001	ND	0.004	0.002	0.003	0.003	0.003	ND
163		0.111	0.052	0.052	0.047	0.032	0.040	0.057	0.079	0.037	0.036
167	0.00001	0.007	0.003	0.004	0.002	0.007	0.002	0.003	0.005	0.002	0.002
169	0.001	ND	0.003	0.003	ND	0.008	ND	ND	0.006	ND	ND
170		0.044	0.024	0.022	0.020	0.051	0.017	0.025	0.033	0.017	0.016
171		0.007	0.004	0.003	0.004	0.007	0.003	0.004	0.005	0.002	0.002
180		0.123	0.074	0.064	0.057	0.149	0.052	0.075	0.095	0.048	0.048
183		0.023	0.013	0.011	0.011	0.021	0.009	0.014	0.016	0.008	0.007
187		0.091	0.038	0.034	0.036	0.068	0.031	0.045	0.057	0.026	0.025
189	0.00001	0.002	0.002	ND	0.001	0.003	0.001	ND	ND	0.001	0.001
194		0.017	0.011	0.010	0.007	0.024	0.009	0.010	0.015	0.008	0.008
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201		0.017	0.009	0.007	0.007	0.015	0.007	0.010	0.011	0.005	0.005
205		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
206		0.003	0.003	0.003	0.002	0.006	0.003	0.002	0.004	0.002	0.002
209		0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.002	0.001	0.001
	Sum	0.976	0.475	0.453	0.393	0.843	0.360	0.517	0.697	0.340	0.322
	Paris 10	0.598	0.290	0.283	0.233	0.558	0.219	0.319	0.428	0.210	0.204

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 7. contd. Congener specific TEFs and PCB congener concentrations ($\mu\text{g/g}$ wet wt) in the contents of gannet eggs collected from Ailsa Craig in 2009.

	TEF	PCB congener concentrations in eggs ($\mu\text{g/g}$ wet wt)									
		E9408	E9409	E9410	E9411	E9412	E9413	E9414	E9415	E9416	E9417
<i>CF</i>		29.24	31.75	37.74	60.24	53.76	47.85	33.67	19.72	23.64	20.28
8		ND	ND	ND	ND	ND	0.002	ND	ND	ND	ND
18		ND	ND	ND	ND	0.001	ND	ND	ND	ND	ND
28		0.003	ND	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.002
29		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
31		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
52		0.003	0.001	0.001	0.001	0.002	0.002	0.001	0.001	ND	0.001
77	0.05	ND	ND	ND	ND	ND	ND	0.002	0.001	0.002	0.005
81	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001
101		0.012	0.004	0.004	0.004	0.004	0.006	0.003	0.002	0.002	0.005
105	0.0001	0.026	0.010	0.010	0.014	0.009	0.023	0.009	0.006	0.006	0.020
114	0.0001	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002
118	0.00001	0.089	0.018	0.021	0.037	0.021	0.057	0.022	0.017	0.021	0.072
123	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.001
126	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
128		0.038	0.008	0.010	0.018	0.010	0.028	0.012	0.008	0.009	0.029
138		0.176	0.031	0.036	0.065	0.040	0.091	0.037	0.031	0.034	0.110
141		ND	ND	ND	ND	ND	0.003	0.001	0.001	0.001	0.003
149		0.029	0.006	0.008	0.011	0.009	0.019	0.006	0.005	0.006	0.018
153		0.427	0.081	0.093	0.183	0.105	0.168	0.091	0.091	0.103	0.324
156	0.0001	0.023	ND	ND	0.014	ND	0.009	0.006	0.004	0.004	0.014
157	0.0001	ND	ND	ND	ND	ND	ND	ND	0.001	0.001	0.003
163		0.060	0.011	0.015	0.025	0.017	0.036	0.013	0.011	0.012	0.038
167	0.00001	0.017	ND	ND	ND	ND	0.005	0.002	0.003	0.003	0.011
169	0.001	ND	ND	ND	ND	ND	ND	0.010	0.005	0.007	0.024
170		0.097	0.016	0.017	0.033	0.019	0.041	0.046	0.022	0.029	0.089
171		0.015	ND	0.002	0.004	0.002	0.003	0.002	0.002	0.002	0.009
180		0.257	0.051	0.050	0.110	0.059	0.097	0.136	0.081	0.101	0.263
183		0.037	0.006	0.008	0.016	0.009	0.022	0.009	0.007	0.009	0.030
187		0.168	0.025	0.031	0.060	0.035	0.088	0.029	0.026	0.031	0.097
189	0.00001	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003
194		0.051	0.009	0.007	0.017	0.011	0.015	0.014	0.010	0.013	0.047
199		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201		0.029	0.003	0.004	0.011	0.006	0.014	ND	ND	0.009	0.039
205		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
206		0.008	ND	ND	ND	ND	ND	0.004	0.002	0.003	0.014
209		ND	ND	ND	ND	ND	ND	0.001	0.001	0.001	0.005
	Sum	0.976	1.567	0.281	0.319	0.626	0.361	0.732	0.458	0.337	0.409
	Paris 10	0.598	1.018	0.197	0.218	0.431	0.242	0.455	0.305	0.233	0.272

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of merlin eggs collected in 2007.

	TEQ concentration in livers of birds (pg/g wet wt)								
	E9015	E9016	E9017	E9018	E9045	E9046	E9047	E9062	E9086
<i>CF</i>	13.29	15.20	12.84	20.05	11.98	13.03	17.93	13.12	16.08
77	ND	ND	ND	ND	ND	ND	ND	ND	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	0.867	0.696	1.023	0.961	0.481	0.383	1.464	1.054	0.369
114	ND	0.151	0.296	0.208	ND	ND	ND	ND	ND
118	0.289	0.273	0.442	0.333	0.227	0.170	0.672	0.438	0.132
123	0.014	ND	ND	ND	0.007	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	1.269	0.965	1.444	1.105	1.022	0.625	2.928	1.497	0.579
157	0.283	ND	ND	0.179	ND	0.100	0.360	0.271	ND
167	0.052	0.042	0.061	0.042	0.032	0.014	0.159	0.048	ND
169	10.47	ND	ND	9.020	5.087	ND	38.03	10.77	4.509
189	0.035	0.029	0.042	0.029	0.026	0.017	0.107	0.039	0.018
Sum	13.28	2.156	3.308	11.88	6.882	1.309	43.72	14.11	5.607

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of merlin eggs collected in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)					
	E9143	E9146	E9147	E9293	E9295	E9298
<i>CF</i>	13.51	13.65	26.96	12.87	2.69	13.87
77	ND	ND	ND	ND	179.1	ND
81	ND	ND	ND	ND	ND	ND
105	0.516	0.802	1.430	0.680	1.428	1.026
114	ND	ND	ND	ND	0.801	ND
118	0.207	0.357	0.646	0.275	0.699	0.409
123	ND	ND	0.016	ND	0.017	ND
126	ND	ND	ND	ND	ND	ND
156	0.804	1.700	2.413	1.010	2.270	1.680
157	ND	0.249	0.396	0.149	0.301	0.235
167	0.048	0.103	0.147	0.055	0.125	0.072
169	8.874	17.60	ND	10.71	ND	ND
189	0.011	0.039	0.052	0.012	0.044	0.025
Sum	10.460	20.85	5.100	12.90	184.8	3.447

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd. . Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of merlin eggs collected in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)					
	E9302	E9340	E9200	E9237	E9238	E9239
<i>CF</i>	<i>16.67</i>	<i>11.41</i>	<i>12.92</i>	<i>12.62</i>	<i>12.29</i>	<i>14.75</i>
77	ND	ND	50.17	ND	ND	ND
81	ND	ND	ND	ND	ND	ND
105	1.157	0.959	1.196	0.960	0.762	1.320
114	ND	ND	ND	ND	ND	ND
118	0.487	0.316	0.440	0.328	0.265	0.482
123	0.010	ND	ND	0.009	0.007	0.015
126	ND	ND	ND	ND	ND	ND
156	1.979	1.014	9.947	1.286	0.980	2.021
157	0.256	0.161	1.256	0.143	0.151	0.317
167	0.110	0.038	0.494	0.058	0.047	0.126
169	18.93	7.300	ND	ND	ND	ND
189	0.035	0.011	0.022	0.020	0.011	0.052
Sum	22.96	9.800	63.53	2.804	2.224	4.333

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of golden eagle and white-tailed sea eagle eggs collected in 2007.

	TEQ concentration in egg contents (pg/g wet wt)					
	golden eagle					sea eagle
	E8996	E9001	E9002	E9020	E9022	E9012
<i>CF</i>	<i>16.07</i>	<i>14.97</i>	<i>16.87</i>	<i>10.26</i>	<i>19.95</i>	<i>13.29</i>
77	ND	ND	ND	ND	ND	ND
81	ND	408.5	ND	ND	ND	97.54
105	1.953	6.803	ND	ND	0.019	39.60
114	0.969	ND	ND	ND	ND	5.912
118	0.897	2.616	0.011	0.056	0.015	20.54
123	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND
156	3.325	7.540	ND	0.452	0.084	88.70
157	0.629	1.348	ND	ND	ND	17.29
167	0.168	0.377	ND	0.026	ND	6.389
169	21.684	32.42	ND	ND	ND	ND
189	0.091	0.172	ND	0.017	ND	1.117
Sum	29.72	459.8	0.011	0.552	0.118	277.1

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of golden eagle eggs collected in 2008.

	TEQ concentration in livers of birds (pg/g wet wt)								
	E9171	E9175	E9176	E9209	E9210	E9212	E9260	E9262	E9264
CF	17.94	16.21	22.66	15.07	12.68	14.86	19.37	20.53	55.25
77	ND	ND	ND	ND	ND	ND	ND	0.00	ND
81	ND	ND	ND	ND	ND	ND	ND	ND	ND
105	0.078	0.173	0.155	0.371	0.254	0.248	0.111	0.065	1.606
114	ND	ND	ND	ND	ND	ND	0.065	ND	0.234
118	0.010	0.078	0.047	0.152	0.096	0.129	0.019	0.013	1.070
123	ND	ND	ND	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	0.085	0.49	0.244	0.603	0.277	0.416	0.152	0.091	2.881
157	ND	ND	ND	ND	ND	ND	ND	ND	0.544
167	ND	0.027	0.014	0.020	0.011	0.015	ND	ND	0.188
169	ND	0.0	ND	ND	ND	4.090	ND	ND	ND
189	ND	0.019	ND	ND	ND	ND	ND	ND	0.083
Sum	0.174	0.785	0.460	1.146	0.638	4.898	0.348	0.169	6.607

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of golden eagle eggs collected in 2008.

	TEQ concentration in egg contents (pg/g wet wt)					
	golden eagle					
	E9265	E9266	E9267	E9315	E9316	E9317
CF	17.84	49.71	37.59	85.92	61.07	14.80
77	ND	ND	ND	ND	ND	49.64
81	ND	ND	ND	ND	ND	ND
105	1.016	0.138	0.189	0.189	0.087	0.423
114	0.149	ND	ND	ND	ND	ND
118	0.470	0.034	0.073	0.073	0.007	0.223
123	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND
156	1.441	0.264	0.629	0.629	ND	1.300
157	0.274	ND	ND	ND	ND	ND
167	0.081	0.002	0.022	0.022	ND	0.052
169	ND	ND	ND	ND	ND	12.30
189	0.039	0.008	0.009	0.009	ND	0.026
Sum	3.470	0.446	0.921	0.921	0.094	63.96

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

* Eggs collected in 2007

Table 8 . contd. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of gannet eggs collected from Ailsa Craig in 2007.

	TEQ concentration in livers of birds (pg/g wet wt)									
	E9072	E9073	E9074	E9075	E9076	E9077	E9080	E9081	E9082	E9083
<i>CF</i>	17.43	14.30	16.89	13.76	15.34	18.55	19.41	15.15	11.83	17.74
77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
81	ND	ND	ND	ND	ND	ND	134.0	ND	ND	ND
105	1.732	0.687	0.776	0.593	1.465	0.604	0.797	1.261	0.614	0.575
114	0.297	ND	0.099	0.019	0.026	0.024	ND	ND	0.109	ND
118	0.486	0.231	0.260	0.204	0.404	0.195	0.281	0.360	0.189	0.186
123	ND	ND	ND	0.029	ND	ND	ND	ND	ND	ND
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	1.156	0.634	0.686	0.485	1.176	0.452	0.676	0.839	0.486	0.476
157	0.219	0.086	0.131	ND	0.379	0.237	0.265	0.279	0.270	ND
167	0.068	0.031	0.036	0.024	0.074	0.020	0.032	0.046	0.025	0.023
169	ND	3.499	3.203	ND	7.764	ND	ND	5.741	ND	ND
189	0.024	0.016	ND	0.008	0.029	0.011	ND	ND	0.012	0.010
Sum	3.982	5.185	5.191	1.363	11.32	1.543	136.0	8.527	1.705	1.271

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 8 . contd.. Congener specific and sum TEQ concentrations (pg/g wet wt) in the contents of gannet eggs collected from Ailsa Craig in 2009.

	TEQ concentration in livers of birds (pg/g wet wt)									
	E9408	E9409	E9410	E9411	E9412	E9413	E9414	E9415	E9416	E9417
<i>CF</i>	29.24	31.75	37.74	60.24	53.76	47.85	33.67	19.72	23.64	20.28
77	ND	ND	ND	ND	ND	ND	111.0	70.47	81.29	268.3
81	ND	ND	ND	ND	ND	ND	ND	ND	ND	132.3
105	2.617	0.952	0.998	1.438	0.906	2.349	0.904	0.573	0.553	1.994
114	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.162
118	0.891	0.185	0.209	0.375	0.208	0.565	0.223	0.174	0.209	0.719
123	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.010
126	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
156	2.341	ND	ND	1.385	ND	0.856	0.566	0.362	0.444	1.351
157	ND	ND	ND	ND	ND	ND	ND	0.082	0.077	0.261
167	0.167	ND	ND	ND	ND	0.053	0.023	0.027	0.030	0.106
169	ND	ND	ND	ND	ND	ND	9.971	5.419	6.848	23.56
189	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.030
Sum	6.02	1.14	1.21	3.20	1.11	3.823	122.7	77.10	89.45	428.8

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 9. Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the contents of eggs collected in 2007.

Species	Egg No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
			HCB	a-HCCH	g-HCCH	HEOD	DDE	DDT	TDE
gannet	E9072	17.43	0.016	0.001	0.000	0.108	0.135	0.000	0.000
gannet	E9073	14.30	0.004	0.000	0.000	0.052	0.057	0.000	0.003
gannet	E9074	16.89	0.008	0.000	0.000	0.072	0.058	0.000	0.000
gannet	E9075	13.76	0.004	0.000	0.000	0.040	0.043	0.000	0.000
gannet	E9076	15.34	0.015	0.002	0.000	0.143	0.137	0.000	0.003
gannet	E9077	18.55	0.005	0.000	0.000	0.049	0.058	0.000	0.000
gannet	E9080	19.41	0.006	0.002	0.000	0.092	0.094	0.000	0.004
gannet	E9081	15.15	0.007	0.000	0.000	0.084	0.065	0.000	0.004
gannet	E9082	11.83	0.013	0.000	0.000	0.054	0.062	0.000	0.004
gannet	E9083	17.74	0.011	0.002	0.000	0.046	0.057	0.000	0.004
merlin	E9015	13.29	0.018	0.000	0.000	0.123	2.926	0.000	0.000
merlin	E9016	15.20	0.019	0.000	0.021	0.123	3.330	0.002	0.000
merlin	E9017	12.84	0.026	0.000	0.000	0.139	4.384	0.037	0.009
merlin	E9018	20.05	0.020	0.000	0.048	0.236	15.258	0.054	0.023
merlin	E9045	11.98	0.026	0.000	0.029	0.000	1.090	0.000	0.000
merlin	E9046	13.03	0.019	0.000	0.001	0.000	2.098	0.000	0.000
merlin	E9047	17.93	0.033	0.000	0.000	0.136	3.182	0.001	0.000
merlin	E9062	13.12	0.047	0.000	0.034	0.236	4.205	0.001	0.027
merlin	E9086	16.08	0.011	0.000	0.000	0.020	0.777	0.000	0.000
golden eagle	E8996	16.07	0.011	0.000	0.000	0.203	1.219	0.000	0.000
golden eagle	E9001	14.97	0.045	0.000	0.010	0.188	3.402	0.000	0.076
golden eagle	E9002	16.87	0.001	0.001	0.000	0.000	0.013	0.000	0.000
golden eagle	E9020	10.26	0.001	0.001	0.000	0.010	0.130	0.000	0.001
golden eagle	E9022	19.95	0.001	0.149	0.001	15.810	36.850	0.000	0.000
sea eagle	E9012	13.29	0.157	0.000	0.000	0.475	40.258	0.000	0.131

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 9. contd. Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the contents of eggs collected in 2008.

Species	Egg No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
			HCB	a-HCCH	g-HCCH	HEOD	DDE	DDT	TDE
golden eagle	E9171	17.94	0.001	ND	0.020	ND	0.008	ND	ND
golden eagle	E9175	16.21	0.004	0.001	ND	0.019	0.096	ND	ND
golden eagle	E9176	22.66	0.002	ND	0.025	ND	0.066	ND	ND
golden eagle	E9209	15.07	0.009	ND	0.008	0.040	0.117	ND	ND
golden eagle	E9210	12.68	0.004	ND	0.002	0.020	0.081	ND	ND
golden eagle	E9212	14.86	0.004	ND	ND	0.014	0.229	ND	ND
golden eagle	E9260	19.37	0.001	ND	0.118	0.016	0.032	ND	ND
golden eagle	E9262	20.53	0.001	ND	0.146	0.010	0.010	ND	ND
golden eagle	E9264	55.25	0.006	ND	0.204	0.029	1.359	ND	ND
golden eagle	E9265	17.84	0.005	ND	ND	0.033	0.430	ND	ND
golden eagle	E9266	49.71	ND	0.002	0.257	0.007	0.091	ND	ND
golden eagle	E9267	37.59	0.001	0.002	0.252	0.016	0.141	ND	ND
golden eagle	E9315	85.92	0.003	ND	0.058	ND	0.015	ND	ND
golden eagle	E9316	61.07	0.001	0.004	0.377	ND	0.014	ND	ND
golden eagle	E9317	14.80	0.005	0.001	0.005	0.047	0.234	ND	ND
merlin	E9143	13.51	0.030	ND	0.009	0.048	1.523	ND	ND
merlin	E9146	13.65	0.027	ND	0.016	0.094	3.164	ND	0.029
merlin	E9147	26.96	0.037	ND	0.036	0.069	6.201	ND	0.020
merlin	E9200	12.92	0.067	ND	0.006	0.536	7.968	ND	0.048
merlin	E9237	12.62	0.040	0.001	0.009	0.207	4.042	0.059	0.004
merlin	E9238	12.29	0.029	0.001	0.009	0.063	4.044	ND	0.014
merlin	E9239	14.75	0.038	0.001	0.042	0.104	5.034	ND	0.007
merlin	E9293	12.87	0.026	0.001	0.140	0.114	2.971	ND	ND
merlin	E9295	2.69	0.045	ND	0.023	0.992	13.995	ND	0.105
merlin	E9298	13.87	0.037	ND	0.015	0.079	2.096	ND	0.005
merlin	E9302	16.67	0.034	0.001	0.014	0.038	3.819	ND	ND
merlin	E9340	11.41	0.008	ND	ND	0.178	1.816	ND	0.014

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations

Table 9. contd. Organochlorine insecticide concentrations ($\mu\text{g/g}$ wet wt) in the contents of northern gannet eggs collected in 2009 from Ailsa Craig.

Species	Egg No.	CF	Organochlorine Insecticide Concentrations ($\mu\text{g/g}$ wet wt)						
			HCB	α -HCCH	γ -HCCH	HEOD	DDE	DDT	TDE
Gannet	E9408	29.24	0.020	ND	ND	0.082	0.247	ND	ND
Gannet	E9409	31.75	0.013	ND	0.036	ND	0.033	ND	ND
Gannet	E9410	37.74	0.012	ND	0.027	0.066	0.036	ND	ND
Gannet	E9411	60.24	0.013	ND	0.076	0.046	0.082	ND	ND
Gannet	E9412	53.76	0.010	ND	0.103	ND	0.057	ND	ND
Gannet	E9413	47.85	0.011	ND	0.164	ND	0.076	ND	ND
Gannet	E9414	33.67	0.013	ND	0.033	0.095	0.056	ND	ND
Gannet	E9415	19.72	0.011	ND	ND	0.063	0.046	ND	ND
Gannet	E9416	23.64	0.010	ND	0.230	0.047	0.052	ND	ND
Gannet	E9417	20.28	0.023	ND	0.095	0.118	0.120	ND	ND

ND is not detected. CF is conversion factor needed to convert from wet wt to lipid wt concentrations