**Supplementary Information to**

**Bioaccumulation of PCBs, OCPs and PBDEs in marine mammals from West Antarctica**

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**More details on the sampling of plankton, krill and fish**

Phytoplankton samples, mostly diatoms (Antarctic Peninsula) and *Phaeocystis sp* (Amundsen and Ross Seas) were collected along the western Antarctica during the austral summers of 007/08, 2009/10, and 2010/11 using ring net tows (Brault, 2012) . All krill and fish samples were collected from within the Palmer Long Term Ecological Research (LTER) Grid Survey Region using 700 µm ring net tows (taken at oblique angles) during the austral summers of 2007/08 and 2010/11. Krill were mostly *Euphausia superba*; fish samples consisted of silverfish (*Pleuragramma antarcticum*) and myctophids (*Electrona antarctica*) (Brault, 2012).

**More details about the extraction and cleanup**

Each sample (0.25 g wet weight) was homogenized with anhydrous Na2SO4, spiked with a surrogate solution mixture (10 µL of 4.0 ng/mL solution in nonane) composed of labelled OCPs (13C6-hexachlorobenzene and 13C12-p,p’-DDT), PCBs (13C12-PCB 8, 28, 52, 118, 138, 180 and 209) and PBDEs (13C12-BDE-28, 47, 99, 153 and 183) and extracted in 60 mL glass centrifuge tubes on a table shaker for one day using a n-hexane/dichloromethane (DCM) solvent mixture (1:1, v:v) followed by another one day extraction with DCM only. Combined extracts were then concentrated to 5.0 mL (in n-hexane) and the lipid content was determined gravimetrically by taking aliquots from the concentrated extracts. Lipids were then removed by treating extracts with an equal volume of concentrated sulfuric acid in an ice bath, followed by passing the extracts on neural silica gel (1.0 g). After eluting the target analytes, samples were concentrated to a final volume of ~ 50 µL in n-hexane after spiking with the injection standards (2,4,6-tribromobiphenyl for OCPs and PCBs, and *p*-terphenyl-*d12* for PBDEs).

**More details on stable isotope analysis of phytoplankton, krill and Antarctic silverfish**

Bulk nitrogen (N) and carbon (C) isotope values (δ15N and δ13C) were analyzed via elemental analyzer-isotope ratio mass spectrometry (EA-IRMS). Isotopic analyses of krill and fish were performed at the Virginia Institute of Marine Science (VIMS) on a Costech ECS 4010 CHNSO Analyzer (Costech Analytical Technologies, Inc.) and Delta V Advantage Isotope Ratio Mass Spectrometer with a Conflo IV Interface (Thermo Electron North North America, LLC). Phytoplankton samples were analyzed at the Stable Isotope Lab at the University of California, Santa Cruz with a Carlo Erba EA 1108 elemental analyzer coupled to a Thermo-Finnigan DeltaPlus XP IRMS.

Lipids were removed prior to stable isotope analysis, as samples had high, but variable lipid content; lipids display depleted δ13C values relative to other molecules (Peterson and Fry, 1987). For krill samples, lipid removal was done with a soxhlet extraction. Lipid was extracted from these samples with a mixture of chloroform:methanol (1:2; v:v) over three days.

Samples were weighed out for stable isotope analysis (~1 mg dry weight for fish and krill samples, and ~2 mg dry weight for phytoplankton) and wrapped in tin cups (5x9 mm, pressed tin capsules, Costech). In all cases, blanks and international standards were analyzed on the EA-IRMS after at least every ten samples. Samples were analyzed for 13C/12C and 15N /14N and expressed in delta notation relative to standards (i.e., Vienna PeeDee Belemite for δ13C and atmospheric nitrogen (AIR) for δ15N).

**Physicochemical Properties**

Finally adjustedair-water partitioning coefficients (KAW)forOCPs and PCBs were obtained from Schenker et al., (2005). Other values were obtained from Khairy and Lohmann, (2013, 2014). Values for PBDEs were obtained from Wania and Dugani, (2003) and Khairy and Lohmann, (2014). Lipid-water partitioning coefficients (Klip-W) for all the target analytes were obtained from Endo and Goss, (2014).

Table A1: Information about the sampled seals and killer whales from the Antarctic “Oden Southern Ocean” cruises during 2008-2011.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sample Id** | **Sex** | **Weight (kg)** | **Life stage** | **Date** | **% lipid** |
| ***Lobodon carcinophagus*** | | | | | |
| C45 | female | 230 | adult | 12/27/2008 | 64.5 |
| CO7 | female | 205 | adult | 12/17/2010 | 80.8 |
| C10 | female | 225.4 | adult | 12/18/2010 | 89.1 |
| C175 | female | 215 | adult | 1/4/2011 | 80.1 |
| C51 | female | 210 | adult | 1/1/2009 | 47.4 |
| C48 | female | 177 | adult | 12/31/2008 | 33.1 |
| C173 | female | 209 | adult | 1/3/2011 | 89.7 |
| C43 | female | 190 | adult | 12/26/2008 | 87.2 |
| C52 | female | 183 | adult | 1/1/2009 | 66.9 |
| C03 | female | 210 | adult | 12/16/2010 | 89.7 |
| C32 | female | 230 | adult | 12/23/2008 | 89.7 |
| C153 | male | 192 | adult | 12/29/2010 | 90.8 |
| C154 | male | 177 | adult | 12/29/2010 | 73.2 |
| C177 | male | 194 | adult | 1/6/2011 | 96.7 |
| C174 | male | 175 | adult | 1/4/2011 | 57.2 |
| C20 | male | 190 | adult | 12/20/2008 | 53.6 |
| C33 | male | 194 | adult | 12/23/2008 | 28.8 |
| C176 | male | 205 | adult | 1/4/2011 | 96.4 |
| C44 | male | 182 | adult | 12/26/2008 | 33.3 |
| C47 | male | 192 | adult | 12/31/2008 | 85.7 |
| C155 | male | 108 | Subadult | 12/30/2010 | 35.7 |
| C156 | male | 123 | Subadult | 12/30/2010 | 41.3 |
| C6 | male | 76 | Subadult | 12/14/2008 | 98.8 |
| C21 | male | 112 | Subadult | 12/20/2008 | 17.8 |
| C4 | male | 92 | Subadult | 12/12/2008 | 47.4 |
| C20 | male | 90 | Subadult | 12/22/2010 | 97.5 |
| C15 | male | 170 | Subadult | 12/18/2010 | 46.5 |
| C157 | female | 113 | Subadult | 12/30/2010 | 83.3 |
| C158 | female | 89 | Subadult | 12/30/2010 | 71.0 |
| C143 | female | 105 | Subadult | 12/28/2010 | 67.1 |
| C46 | female | 90 | Subadult | 12/29/2008 | 94.5 |
| C3 | female | 92 | Subadult | 12/12/2008 | 67.3 |
| C7 | female | 92 | Subadult | 12/14/2008 | 80.8 |

Table A1: Continued.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sample Id** | **Sex** | **Weight (kg)** | **Life stage** | **Date** | **% lipid** |
| ***Leptonychotes weddellii*** | | | | | |
| W136 | female | 235 | adult | 12/26/2010 | 91.5 |
| W174 | female | 250 | adult | 12/28/2010 | 84.2 |
| W137 | female | 243 | adult | 12/26/2010 | 37.7 |
| W220 | female | 261 | adult | 1/11/2010 | 95.0 |
| W156 | female | 350 | adult | 12/27/2010 | 35.1 |
| W117 | female | 290 | adult | 12/24/2010 | 92.5 |
| W19 | female | 309 | adult | 1/7/2009 | 47.8 |
| W04 | female | 400 | adult | 12/21/2010 | 97.1 |
| W02 | female | 300 | adult | 12/20/2010 | 58.0 |
| W118 | female | 216 | adult | 12/24/2010 | 76.5 |
| W113 | male | 255 | adult | 12/22/2010 | 48.8 |
| W176 | male | 270 | adult | 12/28/2010 | 66.8 |
| W112 | male | 350 | adult | 12/22/2010 | 80.4 |
| W133(4) | male | 300 | adult | 12/25/2010 | 92.0 |
| W177 | male | 234 | adult | 12/28/2010 | 60.1 |
| W222 | male | 350 | adult | 1/11/2010 | 57.5 |
| W14 | male | 288 | adult | 1/6/2009 | 42.1 |
| W17 | male | 278 | adult | 1/7/2009 | 44.3 |
| W116 | male | 300 | adult | 12/24/2010 | 52.5 |
| W12 | male | 318 | adult | 1/6/2009 | 29.2 |
| W06 | male | 400 | adult | 12/21/2010 | 81.9 |
| W01 | male | 251 | adult | 12/20/2010 | 76.3 |
| W157 | female | 108 | Subadult | 12/27/2010 | 80.5 |
| W155 | female | 155 | Subadult | 12/27/2010 | 75.5 |
| W214 | female | 184 | Subadult | 1/10/2011 | 36.4 |
| W10 | female | 156 | Subadult | 1/6/2009 | 45.9 |
| W186 | female | 154 | Subadult | 1/6/2011 | 91.8 |
| W219 | female | 237 | Subadult | 1/11/2010 | 77.6 |
| W182 | male | 215 | Subadult | 1/3/2011 | 79.5 |
| W130 | male | 158 | Subadult | 12/25/2010 | 78.9 |
| W11 | male | 200 | Subadult | 12/21/2010 | 66.3 |
| W209 | male | 61 | Subadult | 1/8/2011 | 68.0 |
| W207 | male | no | Subadult | 1/8/2011 | 81.2 |
| W15 | male | 211 | Subadult | 1/7/2009 | 85.8 |

Table A1: Continued.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sample Id** | **Sex** | **Weight (kg)** | **Life stage** | **Date** | **% lipid** |
| ***Ommatophoca rossii*** | | | | | |
| R108 | female | 198 | Adult | 1/2/2011 | 70.6 |
| R109 | female | 153 | Adult | 1/2/2011 | 75.3 |
| R113 | female | 141 | Adult | 1/4/2011 | 55.4 |
| R110 | female | 205 | Adult | 1/3/2011 | 77.8 |
| R102 | female | 145 | Adult | 12/29/2010 | 82.0 |
| R106 | female | 174 | Adult | 12/30/2010 | 70.3 |
| R105 | male | 151 | Adult | 12/30/2010 | 90.3 |
| R104 | male | 205 | Adult | 12/29/2010 | 62.4 |
| R114 | male | 181 | Adult | 1/6/2011 | 93.8 |
| R101 | male | 180 | Adult | 12/29/2010 | 63.3 |
| ***Orcinus orca*** | | | | | |
| W1 | NA | NA | NA | 1/10/2011 | 85.1 |
| W2 | NA | NA | NA | 1/10/2011 | 92.3 |
| W3 | NA | NA | NA | 1/10/2011 | 89.7 |

Table A2: Concentrations of OCPs (ng/g lipid) in the blubber biopsies of *Lobodon carcinophagus*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
| HCB | 13.69 | 14.86 | 21.73 | 81.60 | 33.44 | 62.44 | 0.21 | 30.91 | 0.21 | 16.38 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | 6.36 | 3.25 | 2.83 | 36.50 | 8.50 | 3.25 | 2.63 | 167.28 | 0.32 | 0.32 |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CN | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TN | 6.36 | 8.54 | 10.55 | 67.44 | 3.56 | 5.54 | 4.98 | 60.50 | <LOD | <LOD |
| Oxychlordane | 24.92 | 0.36 | 6.47 | 0.36 | 0.36 | 0.36 | 0.36 | 21.80 | <LOD | <LOD |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 125.98 | 30.80 | 7.52 | 82.88 | 17.87 | 10.50 | 26.86 | 55.52 | 22.62 | 63.57 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 2.55 | 6.22 | 0.34 | 89.87 | 0.34 | 0.34 | 1.53 | 17.65 | 0.34 | 8.67 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 16.40 | 8.96 | 4.73 | 29.92 | 11.09 | 6.25 | 12.93 | 24.21 | 6.76 | 22.81 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | 6.36 | 3.25 | 2.83 | 36.50 | 8.50 | 3.25 | 2.63 | 167.28 | <LOD | <LOD |
| Chlordanes | 31.28 | 8.90 | 17.02 | 67.80 | 3.92 | 5.90 | 5.34 | 82.30 | <LOD | <LOD |
| DDTs | 144.93 | 45.98 | 12.59 | 202.67 | 29.30 | 17.09 | 41.32 | 97.38 | 29.72 | 95.05 |
|  | **Adult Males** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |  |
| HCB | 76.81 | <LOD | 55.98 | 17.06 | 17.75 | <LOD | <LOD | 21.85 | <LOD |  |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| CC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| CN | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| TN | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| Oxychlordane | <LOD | <LOD | <LOD | 23.18 | <LOD | <LOD | <LOD | 40.40 | 53.77 |  |
| *α*-endosulfan | <LOD | <LOD | <LOD | 113.10 | 17.03 | 191.11 | <LOD | <LOD | 47.83 |  |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |

<LOD: below the limit of detection.

Table A2: Continued.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males** | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |
| *p,p’*-DDE | 148.57 | 27.14 | 28.65 | 44.19 | 23.78 | 29.13 | 237.05 | 104.46 | 182.03 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 3.88 | <LOD | <LOD | <LOD | 1.34 | <LOD | 9.15 | 3.73 | 27.75 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 15.74 | 3.69 | 7.43 | 4.10 | 9.32 | 9.58 | 36.10 | 17.31 | 65.20 |
| HCHs | <LOD | <LOD | <LOD | <LOD | 8.95 | <LOD | <LOD | <LOD | 6.63 |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 0.36 | 0.36 | 0.36 | 23.18 | <LOD | <LOD | <LOD | 40.40 | 53.77 |
| DDTs | 168.19 | 31.17 | 36.42 | 48.63 | 34.44 | 39.05 | 282.30 | 125.50 | 274.98 |
|  | **Subadult Females** | | | | | | **Subadult Males** | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S1 | S2 | S3 |
| HCB | 59.57 | 10.63 | 30.58 | 13.44 | 99.18 | 7.93 | 27.21 | 28.37 | 12.1 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | 20.2 | <LOD | 7.71 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CN | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TN | 35.6 | 12.85 | 14.61 | 9.26 | 41.4 | 11.63 | <LOD | <LOD | <LOD |
| Oxychlordane | 22.72 | 10.54 | 3.58 | 25.14 | 15.63 | 17.46 | <LOD | <LOD | <LOD |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 82.45 | 40.81 | 15.13 | 16.81 | 117.29 | 18.02 | 23.08 | 14.75 | 10.52 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 4.25 | 3.26 | 1.82 | 4.16 | 15.19 | 1.13 | 3.46 | <LOD | <LOD |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 20.03 | 20.65 | 2.88 | 7.38 | 55.83 | 3.81 | 15.95 | 7.96 | 2.58 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 78.52 | 23.54 | 25.90 | 34.55 | 57.18 | 29.24 | <LOD | <LOD | <LOD |
| DDTs | 106.73 | 64.72 | 19.83 | 28.35 | 188.31 | 22.96 | 42.49 | 23.05 | 13.44 |

Table A2: Continued.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Subadult Males** | | | |
|  | S4 | S5 | S6 | S7 |
| HCB | 15.2 | 12.97 | 6.35 | 35.17 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | <LOD | <LOD |
| CN | <LOD | <LOD | <LOD | <LOD |
| TN | <LOD | <LOD | <LOD | <LOD |
| Oxychlordane | <LOD | <LOD | <LOD | <LOD |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 15.36 | 3.00 | 11.62 | 27.43 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | <LOD | <LOD | <LOD | 3.18 |
| HCHs | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | <LOD | <LOD | <LOD | <LOD |
| DDTs | 15.36 | 3.00 | 11.62 | 30.75 |

Table A3: Concentrations of OCPs (ng/g lipid) in the blubber biopsies of *Leptonychotes weddellii*.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
| HCB | 4.56 | 6.84 | 5.55 | 14.4 | 6.35 | 4.69 | 7.96 | 8.34 | 26.9 | 10.1 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CN | 11.01 | 6.92 | 10.37 | 38.6 | 7.07 | 18.87 | 21.84 | 8.00 | 5.25 | 11.59 |
| TN | 9.68 | 12.37 | 9.6 | 44.2 | 15.55 | 11.65 | 19.8 | 9.44 | 7.36 | 14.38 |
| Oxychlordane | 7.92 | 6.73 | 6.89 | 15.5 | 5.25 | 7.36 | <LOD | <LOD | 12.54 | 15.88 |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 85.44 | 92.09 | 92.03 | 75 | 48.72 | 56.14 | 43.49 | 37.18 | 11.23 | 112.23 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 3.01 | 3.28 | 5.93 | 28.5 | 6.58 | 4.26 | 4.42 | 2.9 | 3.25 | 8.29 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 31.14 | 29.58 | 35.28 | 35.6 | 27.5 | 27.1 | 32.43 | 22.71 | 3.15 | 52.93 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 28.61 | 26.02 | 26.86 | 98.30 | 27.87 | 37.88 | 42.00 | 17.80 | 25.15 | 41.85 |
| DDTs | 119.6 | 124.95 | 133.2 | 139.10 | 82.80 | 87.50 | 80.34 | 62.79 | 17.63 | 173.45 |
|  | **Adult Males** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
| HCB | <LOD | 62.15 | <LOD | 2.69 | <LOD | 8.77 | <LOD | <LOD | <LOD | 14.44 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | 5.67 | 6.39 | <LOD | <LOD | <LOD | <LOD | <LOD | 61.39 |
| CN | <LOD | <LOD | 18.82 | 36.37 | <LOD | 22.35 | 23.79 | 31.14 | 66.33 | 46.62 |
| TN | 53.69 | <LOD | 28.05 | 43.88 | 27.64 | 30.1 | 40.8 | 29.39 | 61.79 | 63.64 |
| Oxychlordane | <LOD | 76.99 | 30.88 | 40.42 | <LOD | 25.03 | 27.99 | 21.93 | 48.66 | 48.88 |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |

<LOD: below the limit of detection.

Table A3: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
| *p,p’*-DDE | 188.54 | 331.08 | 116.12 | 233.78 | 81.62 | 120.24 | 104.84 | 165.93 | 328.09 | 153.73 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 13.26 | 6.55 | 11.15 | 16.18 | 6.11 | 61.71 | 8.53 | 23.8 | 16.8 | 24.89 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 45.52 | 144.58 | 56.53 | 81.19 | 44.6 | 44.23 | 60.25 | 67.63 | 112.82 | 113.58 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 54.42 | 77.58 | 83.42 | 127.06 | 28.35 | 77.63 | 92.73 | 82.61 | 176.93 | 220.53 |
| DDTs | 247.32 | 482.21 | 183.80 | 331.15 | 132.33 | 226.18 | 173.62 | 257.36 | 457.71 | 292.20 |
|  | **Adult Males** | | **Subadult Females** | | | | | **Subadult Males** | | |
|  | S11 | S12 | S1 | S2 | S3 | S4 | S5 | S1 | S2 | S3 |
| HCB | 0.2112 | 5.87 | 4.83 | 12.28 | 14.37 | 4.46 | 7.81 | 13.42 | 7.96 | 6.8 |
| *α*-HCH | <LOD | <LOD | 2.75 | <LOD | 9.66 | 1.82 | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | 3.05 | <LOD | 18.99 | 2.52 | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | 0.1549 | 0.1549 | 8.17 | 35.62 | 16.35 | 4.51 | 14.14 | 5.45 | 9.61 | 6.03 |
| CN | 28.79 | 15.23 | 11.71 | 43.01 | 37.89 | 5.64 | 31.76 | 17.26 | 9.4 | 9.13 |
| TN | 35.7 | 17.4 | 14.69 | 50.9 | 51.58 | 5.54 | 32.6 | 25.63 | 15.14 | 12.61 |
| Oxychlordane | 34.6 | 17.54 | 17.34 | 62.16 | 21.6 | 7.85 | 35.95 | 17.1 | 13.05 | 11.29 |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 75.66 | 19.87 | 6.19 |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 150.15 | 109.82 | 106.45 | 230.76 | 144.8 | 46.09 | 121.49 | 85.12 | 75.22 | 38.09 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 8.02 | 5.37 | 6.43 | 11.63 | 6.65 | 3.36 | 4.25 | 7.35 | 5.28 | 3.04 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 49.73 | 45.38 | 35.63 | 89.43 | 65.96 | 13.39 | 51.2 | 38.28 | 41.75 | 22.02 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 99.24 | 50.32 | 51.91 | 191.69 | 127.42 | 23.54 | 114.45 | 65.44 | 47.20 | 39.06 |
| DDTs | 207.90 | 160.57 | 148.51 | 331.82 | 217.41 | 62.84 | 176.94 | 130.75 | 122.25 | 63.15 |

Table A3: Continued.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Subadult Males** | | |
|  | S4 | S5 | S6 |
| HCB | 20.2 | 6.73 | 6.08 |
| *α*-HCH | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD |
| CC | 9.08 | 15.13 | 7.36 |
| CN | 7.38 | 17.48 | 10.33 |
| TN | 8.77 | 20.44 | 19.29 |
| Oxychlordane | 13.68 | 15.96 | 16.78 |
| *α*-endosulfan | <LOD | 13.62 | 9.91 |
| *o,p’*-DDE | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 59.48 | 74.18 | 71.25 |
| *o,p’*-DDD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 3.79 | 6.62 | 4.68 |
| *o,p'*-DDT | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 26.17 | 38.33 | 33.5 |
| HCHs | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD |
| Chlordanes | 38.91 | 69.01 | 53.76 |
| DDTs | 89.44 | 119.13 | 109.43 |

Table A4: Concentrations of OCPs (ng/g lipid) in the blubber biopsies of *Ommatophoca rossii*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 |
| HCB | 2.16 | 3.21 | 3.69 | 2.98 | 4.5 | 19.2 |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| HE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| TC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CC | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| CN | 9.42 | 7.74 | 4.25 | 10.7 | 6.37 | 51.1 |
| TN | 10.57 | 8.65 | 6.36 | 8.36 | 3.88 | 73.13 |
| Oxychlordane | 8.08 | 18.09 | 7.36 | 4.98 | 9.09 | 72.72 |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’*-DDE | 163.01 | 80.5 | 120.46 | 122.11 | 77.62 | 441.46 |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p*’-DDD | 8.06 | 3.65 | 15.47 | 6.71 | 4.44 | 25.24 |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| *p,p’-*DDT | 54.88 | 35.99 | 73.92 | 51.27 | 28.5 | 186.95 |
| HCHs | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Heptachlors | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Chlordanes | 28.07 | 34.48 | 17.97 | 24.04 | 19.34 | 196.95 |
| DDTs | 225.95 | 120.14 | 209.85 | 180.09 | 110.56 | 653.65 |
|  | **Adult Males** | | | | | |
|  | S1 | S2 | S3 | S4 |  |  |
| HCB | 8.55 | 3.49 | 3.56 | 3.66 |  |  |
| *α*-HCH | <LOD | <LOD | <LOD | <LOD |  |  |
| *β*-HCH | <LOD | <LOD | <LOD | <LOD |  |  |
| *γ*-HCH | <LOD | <LOD | <LOD | <LOD |  |  |
| *δ*-HCH | <LOD | <LOD | <LOD | <LOD |  |  |
| Heptachlor | <LOD | <LOD | <LOD | <LOD |  |  |
| HE | 9.11 | 4.76 | <LOD | <LOD |  |  |
| TC | <LOD | <LOD | <LOD | <LOD |  |  |
| CC | <LOD | <LOD | <LOD | <LOD |  |  |
| CN | 6.94 | 4.82 | 5.5 | 8.25 |  |  |
| TN | 5.32 | 5.75 | 4.54 | 5.67 |  |  |
| Oxychlordane | 14.51 | 6.33 | 9.31 | 5.75 |  |  |
| *α*-endosulfan | <LOD | <LOD | <LOD | <LOD |  |  |
| *o,p’*-DDE | <LOD | <LOD | <LOD | <LOD |  |  |

<LOD: below the limit of detection.

Table A4: Continued.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males** | | | | | |
|  | S1 | S2 | S3 | S4 |  |  |
| *p,p’*-DDE | 115.02 | 86.05 | 86.19 | 78.1 |  |  |
| *o,p’*-DDD | <LOD | <LOD | <LOD | <LOD |  |  |
| *p,p*’-DDD | 4.15 | 3.32 | 3.92 | 5.89 |  |  |
| *o,p'*-DDT | <LOD | <LOD | <LOD | <LOD |  |  |
| *p,p’-*DDT | 29.8 | 22.8 | 26.68 | 34.94 |  |  |
| HCHs | <LOD | <LOD | <LOD | <LOD |  |  |
| Heptachlors | 9.11 | 4.76 | <LOD | <LOD |  |  |
| Chlordanes | 26.77 | 16.90 | 19.35 | 19.67 |  |  |
| DDTs | 148.97 | 112.17 | 116.79 | 118.93 |  |  |

Table A5: OCP concentrations (ng/g lipid) in *Orcinus orca*.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **W1** | **W2** | **W3** |
| HCB | 1418 | 181 | 366 |
| *α*-HCH | <LOD | <LOD | <LOD |
| *β*-HCH | <LOD | <LOD | <LOD |
| *γ*-HCH | <LOD | <LOD | <LOD |
| *δ*-HCH | <LOD | <LOD | <LOD |
| Heptachlor | <LOD | <LOD | <LOD |
| HE | 65.9 | 9.4 | 16.6 |
| TC | 7.7 | 5.7 | 5.5 |
| CC | 312 | 24.3 | 86.0 |
| CN | 84.9 | 5.7 | 21.6 |
| TN | 249 | 51.5 | 64.2 |
| Oxychlordane | 98.7 | 11.2 | 29.2 |
| *α*-endosulfan | 514 | 43.9 | 101 |
| *o,p’*-DDE | 581 | 55.2 | 104 |
| *p,p’*-DDE | 3509 | 226 | 673 |
| *o,p’*-DDD | 53.4 | 4.1 | 10.6 |
| *p,p*’-DDD | 594 | 54.9 | 115 |
| *o,p'*-DDT | 469 | 80.6 | 94.6 |
| *p,p’-*DDT | <LOD | <LOD | <LOD |
| Heptachlors | 65.9 | 9.4 | 16.6 |
| Chlordanes | 1663 | 181 | 360 |
| DDTs | 4626 | 366 | 894 |

Table A6: Concentrations of PCBs (ng/g lipid) in the blubber biopsies of *Lobodon carcinophagus*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** |
| PCB 8 | 2.63 | 1.62 | 3.29 | 3.82 | 2.61 | 25.30 | 5.23 | 2.81 | 9.75 | 8.26 |
| PCB 11 | 5.36 | 3.29 | 9.05 | 4.50 | 5.31 | 15.55 | <LOD | 4.35 | 3.53 | 1.87 |
| PCB 18 | 2.69 | 1.56 | 0.57 | 7.58 | 13.48 | 9.94 | 5.21 | 5.63 | 2.35 | <LOD |
| PCB 28 | 6.65 | 2.23 | 1.29 | 17.21 | 12.30 | 12.56 | 0.50 | 8.35 | 5.57 | 4.42 |
| PCB 52 | 4.26 | 1.53 | 4.25 | 18.38 | 26.40 | 23.69 | 2.15 | 9.65 | 5.25 | 3.25 |
| PCB 44 | 3.20 | <LOD | 2.11 | 8.15 | 9.99 | 10.99 | <LOD | <LOD | 2.48 | <LOD |
| PCB 66 | 1.88 | 0.85 | 1.63 | 8.04 | 12.20 | 6.35 | <LOD | <LOD | 3.22 | <LOD |
| PCB 101 | 2.85 | 3.25 | 6.29 | 25.40 | 20.93 | 32.50 | 1.96 | 7.36 | 7.52 | 2.74 |
| PCB 81 | 1.66 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 2.45 | <LOD | <LOD |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 123 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 118 | 1.96 | 2.63 | 5.24 | 17.50 | 11.63 | 19.63 | 1.32 | 4.96 | 5.21 | 2.11 |
| PCB 114 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 153 | 7.13 | 5.63 | 8.24 | 23.94 | 30.19 | 45.60 | 2.58 | 10.50 | 4.38 | 3.66 |
| PCB 105 | 1.25 | 1.59 | 2.25 | 4.69 | 18.21 | 8.97 | 0.80 | 1.98 | 2.21 | 0.80 |
| PCB 138 | 6.85 | 4.98 | 7.05 | 21.26 | 26.50 | 36.50 | 2.05 | 8.95 | 3.85 | 3.14 |
| PCB 126 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 187 | 6.43 | 2.11 | 4.69 | 10.65 | 36.03 | 38.40 | 1.55 | 9.63 | 4.21 | 2.54 |
| PCB 128 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 167 | 2.52 | 1.21 | <LOD | 1.25 | 2.21 | 1.25 | <LOD | <LOD | <LOD | <LOD |
| PCB 156 | 1.32 | 1.10 | 2.54 | 2.69 | 1.74 | 1.25 | <LOD | <LOD | <LOD | <LOD |
| PCB 157 | 1.05 | 1.22 | 2.09 | 2.11 | 1.62 | 1.35 | <LOD | <LOD | <LOD | <LOD |
| PCB 180 | 7.26 | 3.62 | 5.96 | 8.75 | 32.50 | 29.60 | 2.15 | 10.54 | 3.25 | 2.18 |
| PCB 169 | 1.36 | 1.02 | 1.98 | 1.57 | 1.45 | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 170 | 3.35 | 1.62 | 4.25 | 4.69 | 14.50 | 9.63 | 1.20 | 6.25 | 2.98 | 1.20 |
| PCB 189 | 2.85 | 1.15 | 3.63 | 2.51 | 6.35 | 5.25 | <LOD | 4.32 | 1.87 | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 74.51 | 42.21 | 76.40 | 194.69 | 286.16 | 334.31 | 26.70 | 97.73 | 67.63 | 36.18 |

<LOD: below the limit of detection.

Table A6: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** |  |
| PCB 8 | 3.09 | 8.54 | 3.26 | 10.30 | 6.40 | 5.39 | 54.45 | 6.14 | 2.15 |  |
| PCB 11 | 2.21 | 4.02 | 1.96 | 16.36 | 4.13 | 3.98 | 31.57 | 9.78 | 1.96 |  |
| PCB 18 | 1.56 | 6.46 | 4.62 | 3.55 | 2.51 | 5.57 | 28.33 | 2.74 | 3.63 |  |
| PCB 28 | 3.25 | 13.08 | 5.86 | 6.79 | 7.44 | 8.55 | 90.30 | 11.09 | 5.25 |  |
| PCB 52 | 1.98 | 14.20 | 12.32 | 7.25 | 6.89 | 12.35 | 56.38 | 12.03 | 25.40 |  |
| PCB 44 | 0.63 | 3.25 | 4.21 | 1.62 | 1.51 | 6.21 | 15.01 | 2.39 | 2.15 |  |
| PCB 66 | 1.11 | 4.26 | 3.26 | 2.15 | 1.56 | 8.76 | 19.25 | 3.29 | 2.89 |  |
| PCB 101 | 3.99 | 7.73 | 7.73 | 8.36 | 3.57 | 10.95 | 75.42 | 8.71 | 63.82 |  |
| PCB 81 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 123 | <LOD | 7.24 | 7.24 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 118 | 2.46 | 6.45 | 6.45 | 6.29 | 1.78 | 8.71 | 43.35 | 5.71 | 50.18 |  |
| PCB 114 | <LOD | <LOD | <LOD | <LOD | 0.65 | <LOD | <LOD | <LOD | <LOD |  |
| PCB 153 | 14.64 | 15.39 | 15.22 | 7.75 | 6.70 | 16.61 | 83.87 | 31.26 | 160.71 |  |
| PCB 105 | 1.24 | 3.25 | <LOD | <LOD | 0.88 | <LOD | <LOD | 1.14 | 19.14 |  |
| PCB 138 | 24.44 | 14.26 | 14.25 | 6.46 | 5.61 | 15.65 | 71.09 | 29.87 | 141.32 |  |
| PCB 126 | <LOD | <LOD | <LOD | <LOD | 0.56 | <LOD | <LOD | <LOD | <LOD |  |
| PCB 187 | 5.22 | 6.62 | 4.18 | 5.22 | 6.62 | 10.22 | 63.62 | 38.07 | 80.50 |  |
| PCB 128 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 167 | 2.15 | 1.58 | 1.64 | <LOD | 1.25 | 2.11 | 4.22 | 1.98 | 3.66 |  |
| PCB 156 | 1.06 | 0.84 | 1.11 | <LOD | 1.16 | 1.28 | 3.54 | 1.36 | 2.71 |  |
| PCB 157 | 0.87 | 0.63 | 1.32 | <LOD | <LOD | 1.71 | 2.87 | 1.28 | 2.35 |  |
| PCB 180 | 4.21 | 5.25 | 6.74 | 4.95 | 4.93 | 8.28 | 40.50 | 22.37 | 117.50 |  |
| PCB 169 | 1.32 | 1.05 | <LOD | <LOD | <LOD | 0.82 | 1.86 | 1.65 | 1.98 |  |
| PCB 170 | 2.63 | 3.65 | 2.75 | 2.17 | 2.25 | 3.82 | 10.25 | 7.25 | 3.68 |  |
| PCB 189 | 1.96 | 2.86 | 1.83 | 1.89 | <LOD | 1.96 | <LOD | <LOD | <LOD |  |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| Total | 80.02 | 130.62 | 105.96 | 91.11 | 66.37 | 132.93 | 695.87 | 198.10 | 690.98 |  |

Table A6: Continued.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Subadult Females** | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** |
| PCB 8 | 3.48 | 3.21 | 5.88 | 16.05 | 3.17 | 4.10 |
| PCB 11 | 1.31 | 2.56 | 2.58 | 15.37 | 1.25 | 2.04 |
| PCB 18 | 0.99 | 1.85 | 2.89 | 7.47 | 3.21 | <LOD |
| PCB 28 | 1.44 | 5.25 | 4.63 | 13.93 | 6.33 | 2.64 |
| PCB 52 | 3.30 | 4.65 | 5.21 | 17.41 | 4.66 | 3.22 |
| PCB 44 | 1.16 | <LOD | <LOD | 4.77 | 1.25 | 0.88 |
| PCB 66 | 0.88 | <LOD | <LOD | <LOD | 2.58 | 1.38 |
| PCB 101 | 2.15 | 3.99 | 6.36 | 11.03 | 4.99 | 3.69 |
| PCB 81 | 1.28 | <LOD | <LOD | 3.81 | 1.36 | 1.11 |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | 1.05 | 0.47 |
| PCB 123 | <LOD | <LOD | <LOD | 2.74 | <LOD | <LOD |
| PCB 118 | 1.96 | 2.81 | 5.99 | 8.00 | 3.17 | 2.84 |
| PCB 114 | <LOD | <LOD | <LOD | 3.11 | <LOD | <LOD |
| PCB 153 | 2.86 | 5.25 | 4.88 | 12.76 | 4.22 | 4.93 |
| PCB 105 | 1.02 | <LOD | <LOD | 2.80 | 2.05 | 1.47 |
| PCB 138 | 2.32 | 4.63 | 4.15 | 5.62 | 3.43 | 3.52 |
| PCB 126 | <LOD | <LOD | <LOD | 2.15 | <LOD | <LOD |
| PCB 187 | 2.63 | 3.71 | 3.21 | 9.44 | 2.99 | 6.13 |
| PCB 128 | <LOD | <LOD | <LOD | 2.79 | <LOD | <LOD |
| PCB 167 | <LOD | <LOD | <LOD | 1.56 | 1.05 | 1.74 |
| PCB 156 | <LOD | <LOD | <LOD | 1.93 | 0.63 | 1.11 |
| PCB 157 | <LOD | <LOD | <LOD | 1.92 | 0.55 | <LOD |
| PCB 180 | 1.85 | 2.74 | 2.84 | 8.99 | 1.98 | 5.82 |
| PCB 169 | <LOD | <LOD | 1.25 | 1.78 | 1.05 | 1.11 |
| PCB 170 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 189 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 28.63 | 40.65 | 49.87 | 155.42 | 50.97 | 48.20 |

Table A6: Continued.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Subadult Males** | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** |
| PCB 8 | 8.83 | 4.53 | 2.44 | 4.01 | 1.62 | 2.90 | 1.80 |
| PCB 11 | 8.67 | 2.81 | 1.70 | 2.51 | 0.94 | 1.50 | 0.80 |
| PCB 18 | 1.86 | 1.99 | 7.35 | 7.66 | 1.97 | 1.54 | 0.41 |
| PCB 28 | 3.81 | 3.28 | 16.39 | 47.49 | 9.17 | 4.25 | 0.41 |
| PCB 52 | 10.00 | 6.55 | 11.40 | 51.39 | 7.91 | 3.66 | 0.95 |
| PCB 44 | 0.40 | 5.42 | 0.40 | 22.48 | 2.75 | 1.05 | 0.90 |
| PCB 66 | 1.38 | 1.16 | 7.40 | 17.18 | 2.89 | 2.41 | 0.22 |
| PCB 101 | 6.24 | 2.27 | 9.23 | 12.52 | 3.76 | 4.49 | 0.45 |
| PCB 81 | <LOD | <LOD | <LOD | 6.25 | <LOD | 1.26 | <LOD |
| PCB 77 | <LOD | <LOD | <LOD | 18.65 | <LOD | 1.04 | <LOD |
| PCB 123 | 4.02 | <LOD | <LOD | <LOD | 2.54 | <LOD | <LOD |
| PCB 118 | 3.29 | 1.96 | 8.85 | 20.33 | 3.66 | 3.69 | 0.42 |
| PCB 114 | 2.50 | <LOD | 4.58 | 6.25 | <LOD | <LOD | <LOD |
| PCB 153 | 5.03 | 3.25 | 13.32 | 21.54 | 3.38 | 4.44 | 0.87 |
| PCB 105 | 3.16 | 1.86 | 5.51 | 6.25 | <LOD | 1.84 | <LOD |
| PCB 138 | 3.45 | 2.87 | 11.96 | 19.63 | 2.88 | 3.96 | 1.01 |
| PCB 126 | 2.80 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 187 | 3.85 | 3.11 | 6.24 | 41.78 | 3.72 | 3.21 | 0.86 |
| PCB 128 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 167 | 1.25 | 0.60 | 2.58 | 4.25 | 0.60 | 1.35 | 0.60 |
| PCB 156 | 1.55 | 0.50 | 1.96 | 2.98 | 0.50 | 0.63 | 0.50 |
| PCB 157 | 1.62 | 0.50 | 1.25 | 2.56 | 0.50 | 0.57 | 0.50 |
| PCB 180 | 2.77 | 2.45 | 5.54 | 38.50 | 4.42 | 2.98 | 0.55 |
| PCB 169 | 1.36 | 0.60 | 1.82 | 2.21 | 0.60 | 1.37 | 0.60 |
| PCB 170 | 0.50 | 1.21 | 1.52 | 15.50 | 0.50 | 1.11 | 0.50 |
| PCB 189 | <LOD | <LOD | <LOD | 5.26 | <LOD | <LOD | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 78.33 | 46.92 | 121.43 | 377.19 | 54.32 | 49.25 | 12.34 |

Table A7: Concentrations of PCBs (ng/g lipid) in the blubber biopsies of *Leptonychotes weddellii*.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** |
| PCB 8 | 2.47 | 1.31 | 1.61 | 4.83 | 2.15 | 3.26 | 2.55 | 1.37 | 5.05 | 1.91 |
| PCB 11 | 1.83 | 0.75 | 1.21 | 3.88 | 1.96 | 2.47 | 2.87 | 1.74 | 2.59 | 1.57 |
| PCB 18 | 2.70 | <LOD | <LOD | 5.47 | 2.36 | 1.69 | 3.57 | <LOD | 3.19 | <LOD |
| PCB 28 | 1.56 | 0.84 | 1.51 | 7.10 | 3.56 | 2.96 | 5.42 | <LOD | 8.87 | <LOD |
| PCB 52 | 3.19 | 1.35 | 2.32 | 4.90 | 4.05 | 5.25 | 3.63 | 1.72 | 6.40 | 1.06 |
| PCB 44 | <LOD | <LOD | <LOD | 8.59 | <LOD | <LOD | <LOD | <LOD | 2.64 | 0.60 |
| PCB 66 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 2.45 | 0.39 |
| PCB 101 | 2.64 | 2.67 | 2.78 | 14.41 | 2.71 | 4.36 | 5.27 | 2.71 | 10.01 | 1.93 |
| PCB 81 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 123 | <LOD | 0.82 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 118 | 3.68 | 2.05 | 3.43 | 8.67 | 3.54 | 3.27 | 3.96 | 2.01 | 0.90 | 1.41 |
| PCB 114 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 153 | 4.08 | 3.79 | 5.35 | 11.68 | 5.53 | 3.29 | 5.09 | 3.61 | 11.64 | 4.37 |
| PCB 105 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 0.44 |
| PCB 138 | 3.60 | 3.30 | 3.58 | 9.97 | 4.84 | 2.87 | 5.91 | 2.83 | 10.36 | 2.62 |
| PCB 126 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 187 | 2.66 | 2.10 | 4.32 | 9.20 | 3.69 | 2.54 | 4.22 | 3.21 | 6.89 | 2.04 |
| PCB 128 | <LOD | 0.74 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 167 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 156 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 157 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 180 | 3.55 | 2.74 | 3.86 | 4.85 | 2.96 | 2.21 | 2.87 | 2.85 | 4.36 | 3.19 |
| PCB 169 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 170 | 1.35 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 189 | <LOD | 1.40 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 33.33 | 23.86 | 29.96 | 93.55 | 37.36 | 34.17 | 45.38 | 22.05 | 75.36 | 21.52 |

<LOD: below the limit of detection.

Table A7: Continued.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males (AM)** | | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** | **S11** |
| PCB 8 | 9.75 | 4.11 | 2.04 | 2.23 | 1.96 | 3.51 | 11.49 | 5.24 | 3.27 | 11.23 | 6.79 |
| PCB 11 | 6.99 | 2.41 | 1.33 | 1.19 | <LOD | <LOD | 6.88 | <LOD | 0.98 | 7.22 | <LOD |
| PCB 18 | 3.62 | 5.25 | <LOD | 1.08 | <LOD | 3.13 | 4.15 | <LOD | <LOD | <LOD | 2.15 |
| PCB 28 | 5.25 | 8.03 | 1.37 | 1.27 | 2.23 | 2.87 | 18.43 | 3.11 | 3.39 | 12.79 | 3.96 |
| PCB 52 | 13.32 | 15.01 | 2.72 | 3.79 | 3.74 | 5.25 | 18.00 | 2.26 | 2.82 | 10.39 | 6.74 |
| PCB 44 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 10.07 | <LOD | <LOD | 5.27 | <LOD |
| PCB 66 | 3.25 | 4.87 | <LOD | <LOD | <LOD | <LOD | 5.59 | <LOD | <LOD | 4.41 | <LOD |
| PCB 101 | 7.17 | 14.87 | 3.02 | 4.99 | 4.89 | 2.95 | 9.95 | 5.61 | 3.59 | 8.91 | 5.94 |
| PCB 81 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 123 | <LOD | 11.78 | 1.39 | <LOD | <LOD | 1.43 | <LOD | 2.58 | <LOD | <LOD | <LOD |
| PCB 118 | 12.10 | 18.71 | 2.77 | 4.60 | 3.76 | 3.39 | 7.35 | 6.54 | 4.67 | 7.98 | 5.17 |
| PCB 114 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 1.79 | <LOD |
| PCB 153 | 6.43 | 19.86 | 7.82 | 10.11 | 6.69 | 11.45 | 20.27 | 13.21 | 12.22 | 28.77 | 10.39 |
| PCB 105 | <LOD | <LOD | 0.91 | <LOD | <LOD | 0.83 | <LOD | <LOD | 0.69 | 4.85 | <LOD |
| PCB 138 | 7.07 | 18.66 | 6.31 | 9.68 | 6.17 | 7.85 | 16.38 | 9.68 | 12.01 | 18.54 | 8.96 |
| PCB 126 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 3.20 | <LOD |
| PCB 187 | 5.46 | 9.37 | 5.63 | 4.81 | 4.22 | 4.90 | 15.07 | 6.71 | 3.29 | 23.36 | 16.09 |
| PCB 128 | <LOD | <LOD | <LOD | 1.86 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 167 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 156 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 157 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 180 | 4.97 | 7.71 | 4.47 | 5.95 | 3.82 | 7.75 | 12.32 | 5.86 | 5.03 | 16.40 | 26.29 |
| PCB 169 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 170 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 189 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 88.58 | 145.99 | 42.65 | 56.98 | 39.44 | 59.07 | 166.28 | 64.47 | 56.62 | 174.24 | 92.48 |

Table A7: Continued.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **AM** | **Subadult Females** | | | | |
|  | **S12** | **S1** | **S2** | **S3** | **S4** | **S5** |
| PCB 8 | 4.11 | 1.97 | 5.84 | 6.55 | 0.97 | 1.81 |
| PCB 11 | 3.39 | <LOD | <LOD | 8.49 | 0.86 | 0.80 |
| PCB 18 | 1.88 | 1.25 | 1.17 | <LOD | <LOD | 0.65 |
| PCB 28 | 5.86 | 2.15 | 2.87 | 10.00 | 2.21 | 2.06 |
| PCB 52 | 4.57 | 2.06 | 12.24 | <LOD | 1.93 | 1.42 |
| PCB 44 | 3.15 | <LOD | <LOD | 4.23 | <LOD | 1.45 |
| PCB 66 | 3.13 | <LOD | <LOD | 5.54 | <LOD | 0.33 |
| PCB 101 | 6.48 | 2.43 | 6.02 | 3.86 | 2.33 | 4.48 |
| PCB 81 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 123 | 1.27 | <LOD | <LOD | 4.38 | <LOD | <LOD |
| PCB 118 | 5.46 | 1.99 | 4.00 | 5.81 | 1.67 | 3.83 |
| PCB 114 | <LOD | 2.08 | <LOD | <LOD | <LOD | <LOD |
| PCB 153 | 20.54 | 3.87 | 24.96 | 14.25 | 2.14 | 10.29 |
| PCB 105 | 1.29 | 0.95 | <LOD | 1.62 | 0.39 | 0.82 |
| PCB 138 | 12.22 | 2.41 | 20.31 | 16.41 | 1.96 | 9.70 |
| PCB 126 | <LOD | <LOD | <LOD | 1.86 | <LOD | <LOD |
| PCB 187 | 22.87 | 3.40 | 6.22 | 15.59 | 2.07 | 5.20 |
| PCB 128 | <LOD | <LOD | <LOD | <LOD | <LOD | 1.25 |
| PCB 167 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 156 | <LOD | <LOD | <LOD | <LOD | <LOD | 1.43 |
| PCB 157 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 180 | 9.58 | 2.74 | 10.85 | 10.69 | 1.96 | 5.97 |
| PCB 169 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 170 | 2.79 | 2.94 | 13.93 | 5.24 | <LOD | 3.72 |
| PCB 189 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |
| Total | 108.60 | 30.23 | 108.41 | 114.51 | 18.50 | 55.22 |

Table A7: Continued.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Subadult Males** | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** |  |
| PCB 8 | 3.94 | 2.00 | 2.58 | 1.38 | 1.30 | 1.27 |  |
| PCB 11 | 2.80 | <LOD | 1.86 | <LOD | 1.39 | <LOD |  |
| PCB 18 | 1.75 | <LOD | 0.82 | 0.38 | 0.66 | <LOD |  |
| PCB 28 | 4.21 | <LOD | 3.67 | 1.04 | 1.22 | 2.11 |  |
| PCB 52 | 6.94 | 1.17 | 2.59 | <LOD | <LOD | 1.96 |  |
| PCB 44 | 2.33 | <LOD | 1.24 | <LOD | <LOD | <LOD |  |
| PCB 66 | 5.69 | 0.57 | 1.23 | <LOD | <LOD | <LOD |  |
| PCB 101 | 14.54 | 1.57 | 3.77 | 2.44 | 1.77 | 2.67 |  |
| PCB 81 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 123 | <LOD | <LOD | 0.30 | 0.40 | <LOD | <LOD |  |
| PCB 118 | 6.60 | 2.50 | 1.93 | 2.41 | 1.93 | 2.23 |  |
| PCB 114 | <LOD | <LOD | 0.18 | <LOD | <LOD | <LOD |  |
| PCB 153 | 15.90 | 3.75 | 6.55 | 4.50 | 5.46 | 5.53 |  |
| PCB 105 | 1.75 | 1.26 | 0.94 | 1.21 | <LOD | 0.58 |  |
| PCB 138 | 13.98 | 3.78 | 3.86 | 3.38 | 3.66 | 4.71 |  |
| PCB 126 | <LOD | 0.69 | <LOD | <LOD | <LOD | <LOD |  |
| PCB 187 | 7.57 | <LOD | 3.39 | 2.86 | 3.98 | 2.33 |  |
| PCB 128 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 167 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 156 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 157 | <LOD | <LOD | <LOD | <LOD | 2.91 | <LOD |  |
| PCB 180 | 7.79 | <LOD | 4.06 | 2.11 | <LOD | 3.25 |  |
| PCB 169 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 170 | 2.26 | <LOD | 2.18 | <LOD | 2.16 | 2.66 |  |
| PCB 189 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| Total | 98.06 | 17.29 | 41.14 | 22.12 | 26.44 | 29.30 |  |

Table A8: Concentrations of PCBs (ng/g lipid) in the blubber biopsies of *Ommatophoca rossii*.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | **Adult Males** | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S1** | **S2** | **S3** | **S4** |  |
| PCB 8 | 1.68 | 2.70 | 10.78 | 2.52 | 1.56 | 7.42 | 5.81 | 1.16 | 2.01 | 2.64 |  |
| PCB 11 | 1.70 | <LOD | 5.70 | <LOD | 0.63 | 2.22 | 2.47 | 0.74 | 4.27 | 0.87 |  |
| PCB 18 | 0.36 | 1.12 | <LOD | <LOD | 0.58 | <LOD | 1.04 | 0.12 | 0.50 | <LOD |  |
| PCB 28 | 0.78 | 0.88 | <LOD | <LOD | 1.61 | 2.70 | 3.81 | 0.72 | 1.46 | 0.84 |  |
| PCB 52 | 1.85 | <LOD | 4.75 | <LOD | 0.97 | 8.39 | 6.41 | 1.36 | 2.11 | <LOD |  |
| PCB 44 | 0.27 | <LOD | <LOD | <LOD | 0.90 | <LOD | 1.38 | <LOD | 0.74 | <LOD |  |
| PCB 66 | 0.33 | <LOD | <LOD | <LOD | 0.58 | <LOD | 1.60 | <LOD | 0.19 | 0.63 |  |
| PCB 101 | 3.30 | 2.64 | 13.20 | 0.89 | 1.90 | 11.27 | 6.19 | 1.81 | 3.39 | 1.93 |  |
| PCB 81 | 0.58 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | 0.34 | <LOD |  |
| PCB 77 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 123 | <LOD | <LOD | 4.12 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 118 | 1.41 | 3.03 | 10.50 | 1.16 | 1.28 | 11.97 | 5.05 | 1.44 | 2.42 | 1.31 |  |
| PCB 114 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 153 | 10.02 | 5.15 | 40.97 | 5.87 | 4.68 | 24.61 | 7.21 | 4.66 | 5.76 | 4.05 |  |
| PCB 105 | 1.06 | <LOD | 9.18 | <LOD | 0.89 | 2.37 | 1.39 | 0.90 | 0.93 | 0.64 |  |
| PCB 138 | 8.25 | 5.48 | 28.22 | 3.92 | 3.86 | 19.75 | 6.63 | 4.43 | 4.64 | 3.57 |  |
| PCB 126 | <LOD | <LOD | 7.90 | <LOD | <LOD | <LOD | 1.41 | <LOD | <LOD | <LOD |  |
| PCB 187 | 4.04 | 4.61 | 26.87 | 3.16 | 2.87 | 9.56 | 5.60 | 2.41 | 5.01 | 2.85 |  |
| PCB 128 | 1.24 | <LOD | <LOD | <LOD | 0.63 | <LOD | <LOD | 0.58 | 0.63 | 1.41 |  |
| PCB 167 | <LOD | <LOD | <LOD | <LOD | 0.55 | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 156 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 157 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 180 | 6.98 | 4.00 | 31.18 | 3.21 | 2.21 | 12.46 | 3.36 | 2.90 | 2.62 | 2.63 |  |
| PCB 169 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 170 | 3.52 | 3.01 | 18.18 | 2.42 | 1.63 | 11.01 | 2.87 | 1.26 | 2.63 | 1.97 |  |
| PCB 189 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 195 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 206 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| PCB 209 | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD | <LOD |  |
| Total | 47.35 | 32.62 | 211.55 | 23.15 | 27.32 | 123.72 | 62.24 | 24.47 | 39.66 | 25.34 |  |

<LOD: below the limit of detection.

Table A9: Concentrations of PCBs (ng/g lipid) in the whale blubber samples of *Orcinus orca*.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **W1** | **W2** | **W3** |
| PCB 8 | 4.83 | 6.60 | 8.70 |
| PCB 11 | 0.94 | 1.11 | 1.61 |
| PCB 18 | 0.92 | 1.69 | 1.62 |
| PCB 28 | 5.76 | 5.40 | 6.45 |
| PCB 52 | 59.9 | 10.8 | 28.1 |
| PCB 44 | 8.90 | 3.10 | 5.49 |
| PCB 66 | 20.2 | 2.23 | 8.35 |
| PCB 101 | 179 | 17.0 | 48.3 |
| PCB 81 | 4.06 | <LOD | <LOD |
| PCB 77 | 2.18 | <LOD | <LOD |
| PCB 123 | 8.91 | 1.61 | 3.33 |
| PCB 118 | 144 | 13.59 | 33.0 |
| PCB 114 | 3.57 | 0.98 | <LOD |
| PCB 153 | 336 | 39.4 | 114 |
| PCB 105 | 26.3 | 4.70 | 7.57 |
| PCB 138 | 275 | 27.16 | 85.1 |
| PCB 126 | 11.27 | 3.29 | 3.90 |
| PCB 187 | 122 | 21.4 | 38.9 |
| PCB 128 | 25.0 | 3.11 | 7.04 |
| PCB 167 | 10.12 | 1.65 | 3.41 |
| PCB 156 | 22.5 | 4.42 | 6.46 |
| PCB 157 | 5.68 | 1.21 | 1.43 |
| PCB 180 | 194 | 42.7 | 73.5 |
| PCB 169 | 1.22 | <LOD | 2.39 |
| PCB 170 | 105 | 20.6 | 32.5 |
| PCB 189 | 2.57 | 1.21 | <LOD |
| PCB 195 | 21.6 | 9.67 | 12.8 |
| PCB 206 | 2.92 | 1.58 | <LOD |
| PCB 209 | 0.51 | <LOD | <LOD |
| Total | 1605 | 246 | 534 |

Table A10: Concentrations of PBDEs (ng/g lipid) in the blubber biopsies of *Lobodon carcinophagus*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 30 | ND | ND | ND | ND | 1.61 | ND | ND | ND | ND | ND |
| BDE 28 | ND | ND | ND | ND | 2.93 | ND | ND | ND | ND | ND |
| BDE 49 | ND | 0.47 | ND | ND | 0.62 | ND | ND | ND | ND | ND |
| BDE 47 | 2.56 | 1.06 | 0.77 | 9.04 | 26.12 | 19.52 | 1.31 | 2.89 | 5.36 | 2.04 |
| BDE 100 | ND | 0.41 | 0.28 | 3.95 | 3.78 | 3.76 | ND | ND | 0.82 | ND |
| BDE 99 | 3.53 | 1.28 | 0.87 | 9.26 | 14.06 | 18.42 | 1.30 | 5.07 | 4.59 | 1.25 |
| BDE 154 | ND | 0.22 | ND | ND | 1.07 | 2.02 | ND | ND | 0.56 | ND |
| BDE 153 | ND | 0.80 | ND | 3.64 | 2.38 | 5.02 | ND | ND | 2.80 | ND |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Total | 6.10 | 4.24 | 1.93 | 25.89 | 52.56 | 48.74 | 2.61 | 7.96 | 14.13 | 3.29 |
|  | **Adult Males** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** |  |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 30 | ND | ND | ND | ND | 0.77 | ND | ND | 1.06 | ND |  |
| BDE 28 | ND | ND | ND | ND | 0.72 | ND | ND | 2.07 | ND |  |
| BDE 49 | 1.28 | ND | 0.94 | 1.25 | 0.17 | ND | ND | 1.72 | 3.45 |  |
| BDE 47 | 5.00 | 2.40 | 1.54 | 2.96 | 5.94 | 21.73 | 23.30 | 35.70 | 6.67 |  |
| BDE 100 | 1.02 | 0.71 | ND | 1.58 | 0.74 | 4.39 | 16.46 | 4.91 | ND |  |
| BDE 99 | 5.31 | 2.23 | 1.28 | 2.46 | 3.91 | 18.16 | 48.00 | 19.91 | 8.05 |  |
| BDE 154 | ND | ND | ND | ND | 0.29 | ND | ND | 1.03 | ND |  |
| BDE 153 | 3.73 | ND | 2.21 | ND | 0.83 | ND | ND | 1.56 | ND |  |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND | ND | ND |  |
| Total | 16.34 | 5.34 | 5.97 | 8.25 | 13.38 | 44.28 | 87.77 | 67.95 | 18.17 |  |

<LOD: below the limit of detection.

Table A10: Continued.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Subadult Females** | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** |  |  |
| BDE 2 | ND | ND | ND | ND | ND | ND |  |  |
| BDE 8 | ND | ND | ND | ND | ND | ND |  |  |
| BDE 15 | ND | ND | ND | ND | ND | ND |  |  |
| BDE 30 | 0.53 | ND | ND | ND | ND | ND |  |  |
| BDE 28 | 0.69 | ND | ND | ND | ND | ND |  |  |
| BDE 49 | 0.15 | 0.72 | ND | ND | ND | ND |  |  |
| BDE 47 | 1.46 | 1.45 | 1.16 | 7.63 | 5.65 | 5.80 |  |  |
| BDE 100 | 0.48 | ND | 0.30 | 1.83 | ND | 1.15 |  |  |
| BDE 99 | 2.38 | 1.49 | 1.24 | 6.52 | ND | 4.41 |  |  |
| BDE 154 | 0.30 | ND | ND | 1.07 | ND | 0.62 |  |  |
| BDE 153 | 0.81 | ND | ND | 1.79 | ND | 1.49 |  |  |
| BDE 183 | ND | ND | ND | ND | ND | ND |  |  |
| Total | 6.78 | 3.67 | 2.70 | 18.84 | 5.65 | 13.47 |  |  |
|  | **Subadult Males** | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** |  |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND |  |
| BDE 30 | ND | ND | 1.61 | 5.84 | 1.82 | ND | ND |  |
| BDE 28 | ND | ND | 1.49 | 4.63 | 1.25 | ND | ND |  |
| BDE 49 | 0.44 | 0.29 | 0.71 | 1.01 | 0.28 | 1.08 | ND |  |
| BDE 47 | 2.17 | 1.33 | 11.25 | 26.83 | 5.66 | 6.17 | 7.96 |  |
| BDE 100 | 0.37 | ND | 1.38 | 4.57 | 1.22 | 2.02 | 4.04 |  |
| BDE 99 | 1.67 | ND | 7.68 | 23.00 | 5.59 | 6.60 | 14.27 |  |
| BDE 154 | ND | ND | 0.51 | 1.69 | 0.16 | ND | ND |  |
| BDE 153 | 1.73 | ND | 1.83 | 4.55 | 0.74 | ND | ND |  |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND |  |
| Total | 6.38 | 1.63 | 26.46 | 72.13 | 16.72 | 15.87 | 26.27 |  |

Table A11: Concentrations of PBDEs (ng/g lipid) in the blubber biopsies of *Leptonychotes weddellii*

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** |
| BDE 2 | ND | ND | 0.46 | ND | ND | ND | ND | ND | 3.60 | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 30 | 0.20 | 0.24 | ND | ND | ND | ND | 0.95 | ND | ND | ND |
| BDE 28 | 0.24 | 0.21 | ND | ND | ND | ND | 0.81 | ND | 2.22 | 0.30 |
| BDE 49 | ND | 0.22 | 0.37 | 0.97 | ND | ND | ND | ND | ND | 0.29 |
| BDE 47 | 0.37 | 0.83 | 0.64 | 3.52 | 0.99 | 1.69 | 4.79 | 0.40 | 6.70 | 0.50 |
| BDE 100 | ND | 0.20 | 0.14 | ND | 0.21 | 0.60 | 0.85 | ND | 1.09 | 0.12 |
| BDE 99 | 0.36 | 1.06 | 0.60 | ND | 1.14 | 1.77 | 5.37 | 0.76 | 7.67 | 0.46 |
| BDE 154 | ND | 0.23 | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 153 | 0.20 | 0.39 | ND | ND | ND | ND | ND | ND | 5.99 | ND |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Total | 1.67 | 3.35 | 2.21 | 4.49 | 2.34 | 4.06 | 12.77 | 1.16 | 27.27 | 1.67 |
|  | **Adult Males** | | | | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** | **S8** | **S9** | **S10** |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| BDE 30 | ND | 2.83 | 0.26 | ND | ND | ND | 1.84 | ND | ND | 1.81 |
| BDE 28 | ND | 2.51 | 0.34 | ND | 0.50 | ND | 1.91 | ND | ND | 1.99 |
| BDE 49 | ND | 1.13 | 0.14 | 0.23 | ND | 0.19 | 0.36 | 1.09 | 0.63 | 1.37 |
| BDE 47 | 4.01 | 6.81 | 0.97 | 0.43 | 1.11 | 0.86 | 9.79 | 3.84 | 1.56 | 17.48 |
| BDE 100 | 1.31 | 1.27 | 0.12 | ND | 0.36 | ND | 1.34 | ND | 0.44 | 2.64 |
| BDE 99 | 4.90 | 6.74 | 0.74 | 0.55 | 1.46 | 1.05 | 6.70 | 1.90 | 1.54 | 11.44 |
| BDE 154 | ND | 1.30 | ND | ND | ND | ND | 0.81 | ND | ND | 1.24 |
| BDE 153 | ND | 6.70 | 0.61 | ND | ND | 0.53 | 1.60 | ND | 0.70 | 2.33 |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| Total | 10.22 | 29.28 | 3.24 | 1.21 | 3.43 | 2.62 | 24.36 | 6.82 | 4.87 | 40.30 |

<LOD: below the limit of detection.

Table A11: Continued.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Males** | | **Subadult Females** | | | | |
|  | **S11** | **S12** | **S1** | **S2** | **S3** | **S4** | **S5** |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND |
| BDE 30 | ND | 0.17 | ND | 0.77 | 0.55 | ND | ND |
| BDE 28 | ND | 0.57 | ND | 0.90 | 0.69 | ND | ND |
| BDE 49 | 0.71 | 0.23 | 0.17 | 0.72 | ND | ND | ND |
| BDE 47 | 2.17 | 0.87 | 0.72 | 5.14 | 4.24 | 0.47 | 1.20 |
| BDE 100 | 0.52 | 0.45 | 0.21 | 0.77 | 0.93 | ND | 0.27 |
| BDE 99 | 2.21 | 1.25 | 0.65 | 4.08 | 3.70 | 0.56 | 0.76 |
| BDE 154 | ND | ND | ND | 0.30 | 0.33 | ND | ND |
| BDE 153 | ND | 0.34 | ND | 1.00 | 1.26 | ND | ND |
| BDE 183 | ND | ND | ND | ND | ND | ND | ND |
| Total | 5.61 | 3.87 | 1.76 | 13.67 | 11.71 | 1.03 | 2.23 |
|  | **Subadult Males** | | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** | **S7** |
| BDE 2 | ND | ND | ND | ND | ND | ND | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND | ND |
| BDE 30 | ND | ND | 0.44 | 0.19 | ND | ND | ND |
| BDE 28 | ND | ND | 0.38 | 0.80 | ND | ND | ND |
| BDE 49 | 0.31 | 0.14 | 0.23 | 1.07 | 0.19 | ND | ND |
| BDE 47 | 1.44 | 0.81 | 3.52 | 27.15 | 0.57 | 2.56 | 0.95 |
| BDE 100 | 0.23 | ND | 0.57 | 4.03 | ND | 0.29 | ND |
| BDE 99 | 0.95 | 0.72 | 2.24 | 16.19 | 0.37 | 1.70 | 0.85 |
| BDE 154 | ND | ND | 0.10 | 0.85 | 0.15 | 0.20 | ND |
| BDE 153 | ND | ND | 0.26 | 1.03 | 0.45 | 0.66 | ND |
| BDE 183 | ND | ND | ND | ND | ND | ND | 3.06 |
| Total | 2.93 | 1.67 | 7.75 | 51.32 | 1.75 | 5.41 | 4.86 |

Table A12: Concentrations of PBDEs (ng/g lipid) in the blubber biopsies of *Ommatophoca rossii*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Adult Females** | | | | | |
|  | **S1** | **S2** | **S3** | **S4** | **S5** | **S6** |
| BDE 2 | ND | ND | ND | ND | ND | ND |
| BDE 8 | ND | ND | ND | ND | ND | ND |
| BDE 15 | ND | ND | ND | ND | ND | ND |
| BDE 30 | 0.44 | ND | ND | ND | ND | ND |
| BDE 28 | 0.22 | ND | ND | ND | ND | ND |
| BDE 49 | 0.11 | 0.38 | ND | ND | 0.11 | 0.37 |
| BDE 47 | 0.76 | 0.65 | 8.10 | 0.76 | 0.69 | 2.00 |
| BDE 100 | 0.24 | 0.20 | 2.29 | 0.26 | 0.16 | 0.33 |
| BDE 99 | 0.71 | 0.42 | 10.54 | 0.48 | 1.46 | 1.84 |
| BDE 154 | 0.23 | ND | 0.64 | ND | 0.25 | ND |
| BDE 153 | 0.42 | ND | 2.03 | 0.44 | 0.78 | 1.01 |
| BDE 183 | ND | ND | ND | ND | ND | ND |
| Total | 3.12 | 1.65 | 23.60 | 1.94 | 3.45 | 5.56 |
|  | **Adult Males** | | | | | |
|  | **S1** | **S2** | **S3** | **S4** |  |  |
| BDE 2 | ND | ND | ND | ND |  |  |
| BDE 8 | ND | ND | ND | ND |  |  |
| BDE 15 | ND | ND | ND | ND |  |  |
| BDE 30 | 0.61 | 0.22 | 0.26 | ND |  |  |
| BDE 28 | 0.57 | 0.16 | 0.20 | ND |  |  |
| BDE 49 | ND | 0.10 | ND | 0.14 |  |  |
| BDE 47 | 1.58 | 1.04 | 1.31 | 0.94 |  |  |
| BDE 100 | 0.40 | 0.14 | 0.22 | 0.32 |  |  |
| BDE 99 | 1.55 | 0.62 | 0.92 | 1.03 |  |  |
| BDE 154 | 0.27 | 0.15 | 0.18 | ND |  |  |
| BDE 153 | 0.55 | 0.29 | 0.33 | ND |  |  |
| BDE 183 | ND | 0.44 | 0.68 | ND |  |  |
| Total | 5.53 | 3.18 | 4.15 | 2.43 |  |  |

<LOD: below the limit of detection.

Table A13: Concentrations of PBDEs (ng/g lipid) in the blubber biopsies of *Orcinus orca*

|  |  |  |  |
| --- | --- | --- | --- |
|  | **W1** | **W2** | **W3** |
| BDE 2 | <LOD | <LOD | <LOD |
| BDE 8 | <LOD | <LOD | <LOD |
| BDE 15 | <LOD | <LOD | <LOD |
| BDE 30 | 1.13 | <LOD | 0.67 |
| BDE 28 | 1.76 | <LOD | 0.29 |
| BDE 49 | 10.8 | 2.08 | 3.62 |
| BDE 47 | 16.3 | 6.41 | 5.85 |
| BDE 100 | 1.10 | 0.13 | 1.09 |
| BDE 99 | 0.47 | <LOD | 1.54 |
| BDE 154 | 0.30 | <LOD | 1.40 |
| BDE 153 | 0.41 | <LOD | 1.69 |
| BDE 183 | <LOD | <LOD | <LOD |
| Total | 32.2 | 8.62 | 16.1 |

Table A14: Statistical summary of the gene transcripts of xenobiotic biomarkers and immune relevant cell mediators in blood samples collected from the seal species (Lehnert et al., 2017).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Weddell seals** | | | |
| **copies/µl** | **Minimum** | **Maximum** | **Geometric mean** | **Average** |
| **ARNT** | 0.27 | 1.26 | 0.57 | 0.60 |
| **AHR** | 0.34 | 1.43 | 0.66 | 0.69 |
| **PPAR** | 0.22 | 1.25 | 0.61 | 0.67 |
| **IL-2** | 0.07 | 1.36 | 0.39 | 0.49 |
| **IL-10** | 0.02 | 0.31 | 0.09 | 0.11 |
| **HSP70** | 0.26 | 9.47 | 0.88 | 1.33 |
|  | **Crabeater seals** | | | |
| **ARNT** | 1.38 | 8.19 | 2.90 | 3.11 |
| **AHR** | 1.06 | 4.96 | 2.55 | 2.70 |
| **PPAR** | 2.50 | 28.32 | 8.11 | 10.00 |
| **IL-2** | 0.49 | 11.09 | 3.65 | 4.18 |
| **IL-10** | 0.02 | 1.30 | 0.13 | 0.21 |
| **HSP70** | 0.04 | 0.16 | 0.08 | 0.09 |
|  | **Ross seals** | | | |
| **ARNT** | 0.13 | 0.39 | 0.26 | 0.27 |
| **AHR** | 0.35 | 0.89 | 0.61 | 0.63 |
| **PPAR** | 1.10 | 4.12 | 2.39 | 2.59 |
| **IL-2** | 0.39 | 2.21 | 1.02 | 1.14 |
| **IL-10** | 0.27 | 2.71 | 1.03 | 1.29 |
| **HSP70** | 2.08 | 6.03 | 3.28 | 3.48 |

ARNT: aryl hydrocarbon receptor nuclear translocator; AHR: aryl hydrocarbon receptor; IL-2: pro-inflammatory cytokines interleukin-2; IL-10: pro-inflammatory cytokines interleukin-10; HSP70: heat-shock-protein 70.

Table A15: Calculated correlation coefficients for the pollutant concentrations and biomarkers in the seal species. Significant values are shown in bold.

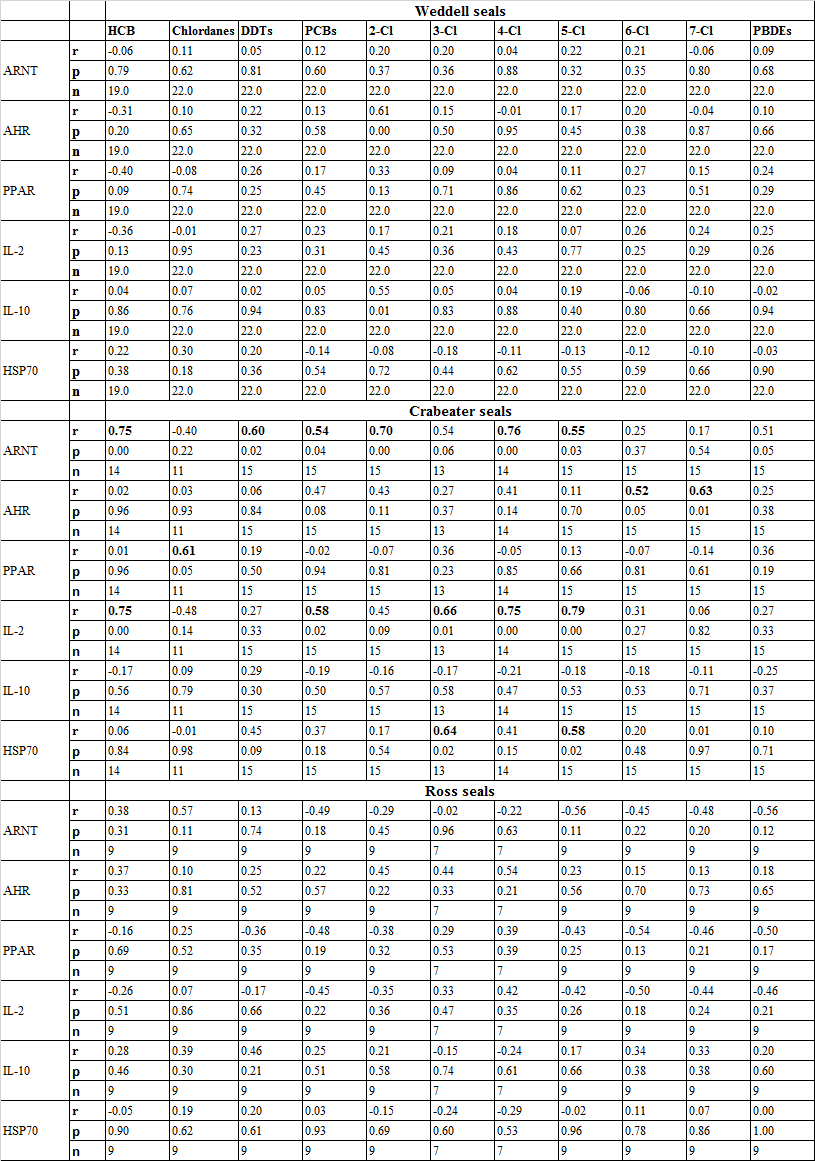


Table A16: Calculated BAFs (L/kg lipid) for OCPs in the seal and killer whale samples.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LCAF** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
| HCBa | 2.96E+07 | 3.21E+07 | 4.70E+07 | 1.76E+08 | 7.23E+07 | 1.35E+08 | NC | 6.68E+07 | NC | 3.54E+07 |
| HCBb | 3.67E+06 | 3.98E+06 | 5.83E+06 | 2.19E+07 | 8.97E+06 | 1.67E+07 | NC | 8.29E+06 | NC | 4.39E+06 |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | 5.30E+07 | 2.71E+07 | 2.36E+07 | 3.04E+08 | 7.08E+07 | 2.71E+07 | 2.19E+07 | 1.39E+09 | NC | NC |
| CNa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| TNa | 3.18E+07 | 4.27E+07 | 5.28E+07 | 3.37E+08 | 1.78E+07 | 2.77E+07 | 2.49E+07 | 3.03E+08 | NC | NC |
| Oxychlordanea | 8.31E+08 |  | 2.16E+08 | NC | NC | NC | NC | 7.27E+08 | NC | NC |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 1.57E+08 | 3.85E+07 | 9.40E+06 | 1.04E+08 | 2.23E+07 | 1.31E+07 | 3.36E+07 | 6.94E+07 | 2.83E+07 | 7.95E+07 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 1.42E+07 | 3.46E+07 | NC | 4.99E+08 | NC | NC | 8.50E+06 | 9.81E+07 | NC | 4.82E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 2.48E+07 | 1.36E+07 | 7.17E+06 | 4.53E+07 | 1.68E+07 | 9.47E+06 | 1.96E+07 | 3.67E+07 | 1.02E+07 | 3.46E+07 |
| PCB 18 | 4.48E+07 | 2.60E+07 | 9.50E+06 | 1.26E+08 | 2.25E+08 | 1.66E+08 | 8.68E+07 | 9.38E+07 | 3.92E+07 | NC |
| PCB 28 | 1.06E+08 | 3.54E+07 | 2.05E+07 | 2.73E+08 | 1.95E+08 | 1.99E+08 | 7.94E+06 | 1.33E+08 | 8.84E+07 | 7.02E+07 |
| PCB 52 | 8.35E+07 | 3.00E+07 | 8.33E+07 | 3.60E+08 | 5.18E+08 | 4.65E+08 | 4.22E+07 | 1.89E+08 | 1.03E+08 | 6.37E+07 |
| PCB 101 | 8.26E+06 | 9.42E+06 | 1.82E+07 | 7.36E+07 | 6.07E+07 | 9.42E+07 | 5.68E+06 | 2.13E+07 | 2.18E+07 | 7.94E+06 |
| PCB 118 | 3.44E+07 | 4.61E+07 | 9.19E+07 | 3.07E+08 | 2.04E+08 | 3.44E+08 | 2.32E+07 | 8.70E+07 | 9.14E+07 | 3.70E+07 |
| PCB 153 | 1.55E+08 | 1.22E+08 | 1.79E+08 | 5.20E+08 | 6.56E+08 | 9.91E+08 | 5.61E+07 | 2.28E+08 | 9.52E+07 | 7.96E+07 |
| PCB 105 | 6.25E+07 | 7.95E+07 | 1.13E+08 | 2.35E+08 | 9.11E+08 | 4.49E+08 | 4.00E+07 | 9.90E+07 | 1.11E+08 | 4.00E+07 |
| PCB 138 | 3.43E+08 | 2.49E+08 | 3.53E+08 | 1.06E+09 | 1.33E+09 | 1.83E+09 | 1.03E+08 | 4.48E+08 | 1.93E+08 | 1.57E+08 |
| PCB 187 | 4.29E+08 | 1.41E+08 | 3.13E+08 | 7.10E+08 | 2.40E+09 | 2.56E+09 | 1.03E+08 | 6.42E+08 | 2.81E+08 | 1.69E+08 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | 1.55E+08 | 1.29E+08 | 2.99E+08 | 3.16E+08 | 2.05E+08 | 1.47E+08 | NC | NC | NC | NC |
| PCB 180 | 6.85E+08 | 3.42E+08 | 5.62E+08 | 8.25E+08 | 3.07E+09 | 2.79E+09 | 2.03E+08 | 9.94E+08 | 3.07E+08 | 2.06E+08 |

NC: not calculated; LC: *Lobodon carcinophagus*; AF: adult female. a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LCAM** | | | | | | | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |  |
| HCBa | 1.66E+08 | NC | 1.21E+08 | 3.69E+07 | 3.84E+07 | NC | NC | 4.72E+07 | NC |  |
| HCBb | 2.06E+07 | NC | 1.50E+07 | 4.57E+06 | 4.76E+06 | NC | NC | 5.86E+06 | NC |  |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| CNa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| TNa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| Oxychlordanea | NC | NC | NC | 7.73E+08 | NC | NC | NC | 1.35E+09 | 1.79E+09 |  |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *p,p*’-DDEa | 1.86E+08 | 3.39E+07 | 3.58E+07 | 5.52E+07 | 2.97E+07 | 3.64E+07 | 2.96E+08 | 1.31E+08 | 2.28E+08 |  |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *p,p’*-DDDa | 2.16E+07 | NC | NC | NC | 7.44E+06 | NC | 5.08E+07 | 2.07E+07 | 1.54E+08 |  |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| *p,p’*-DDTa | 2.38E+07 | 5.59E+06 | 1.13E+07 | 6.21E+06 | 1.41E+07 | 1.45E+07 | 5.47E+07 | 2.62E+07 | 9.88E+07 |  |
| PCB 18 | 2.60E+07 | 1.08E+08 | 7.70E+07 | 5.92E+07 | 4.18E+07 | 9.28E+07 | 4.72E+08 | 4.57E+07 | 6.05E+07 |  |
| PCB 28 | 5.16E+07 | 2.08E+08 | 9.30E+07 | 1.08E+08 | 1.18E+08 | 1.36E+08 | 1.43E+09 | 1.76E+08 | 8.33E+07 |  |
| PCB 52 | 3.88E+07 | 2.78E+08 | 2.42E+08 | 1.42E+08 | 1.35E+08 | 2.42E+08 | 1.11E+09 | 2.36E+08 | 4.98E+08 |  |
| PCB 101 | 1.16E+07 | 2.24E+07 | 2.24E+07 | 2.42E+07 | 1.03E+07 | 3.17E+07 | 2.19E+08 | 2.52E+07 | 1.85E+08 |  |
| PCB 118 | 4.32E+07 | 1.13E+08 | 1.13E+08 | 1.10E+08 | 3.12E+07 | 1.53E+08 | 7.61E+08 | 1.00E+08 | 8.80E+08 |  |
| PCB 153 | 3.18E+08 | 3.35E+08 | 3.31E+08 | 1.68E+08 | 1.46E+08 | 3.61E+08 | 1.82E+09 | 6.80E+08 | 3.49E+09 |  |
| PCB 105 | 6.20E+07 | 1.63E+08 | NC | NC | 4.40E+07 | NC | NC | 5.70E+07 | 9.57E+08 |  |
| PCB 138 | 1.22E+09 | 7.13E+08 | 7.13E+08 | 3.23E+08 | 2.81E+08 | 7.83E+08 | 3.55E+09 | 1.49E+09 | 7.07E+09 |  |
| PCB 187 | 3.48E+08 | 4.41E+08 | 2.79E+08 | 3.48E+08 | 4.41E+08 | 6.81E+08 | 4.24E+09 | 2.54E+09 | 5.37E+09 |  |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC |  |
| PCB 156 | 1.25E+08 | 9.88E+07 | 1.31E+08 | NC | 1.36E+08 | 1.51E+08 | 4.16E+08 | 1.60E+08 | 3.19E+08 |  |
| PCB 180 | 3.97E+08 | 4.95E+08 | 6.36E+08 | 4.67E+08 | 4.65E+08 | 7.81E+08 | 3.82E+09 | 2.11E+09 | 1.11E+10 |  |

Table A16: Continued.

NC: not calculated; LC: *Lobodon carcinophagus*; AM: adult male; a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LCSAF** | | | | | | **LCSAM** | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S1 | S2 | S3 | S4 |
| HCBa | 1.29E+08 | 2.30E+07 | 6.61E+07 | 2.91E+07 | 2.14E+08 | 1.71E+07 | 5.88E+07 | 6.13E+07 | 2.62E+07 | 3.29E+07 |
| HCBb | 1.60E+07 | 2.85E+06 | 8.20E+06 | 3.60E+06 | 2.66E+07 | 2.13E+06 | 7.29E+06 | 7.61E+06 | 3.24E+06 | 4.08E+06 |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| TNa | 1.78E+08 | 6.43E+07 | 7.31E+07 | 4.63E+07 | 2.07E+08 | 5.82E+07 | NC | NC | NC | NC |
| Oxychlordanea | 7.57E+08 | 3.51E+08 | 1.19E+08 | 8.38E+08 | 5.21E+08 | 5.82E+08 | NC | NC | NC | NC |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 1.03E+08 | 5.10E+07 | 1.89E+07 | 2.10E+07 | 1.47E+08 | 2.25E+07 | 2.89E+07 | 1.84E+07 | 1.32E+07 | NC |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 2.36E+07 | 1.81E+07 | 1.01E+07 | 2.31E+07 | 8.44E+07 | 6.28E+06 | 1.92E+07 | NC | NC | 8.53E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 3.03E+07 | 3.13E+07 | 4.36E+06 | 1.12E+07 | 8.46E+07 | 5.77E+06 | 2.42E+07 | 1.21E+07 | 3.91E+06 | NC |
| PCB 18 | 1.65E+07 | 3.08E+07 | 4.82E+07 | 1.25E+08 | 5.35E+07 |  | 3.10E+07 | 3.32E+07 | 1.23E+08 | 1.28E+08 |
| PCB 28 | 2.29E+07 | 8.33E+07 | 7.35E+07 | 2.21E+08 | 1.00E+08 | 4.19E+07 | 6.05E+07 | 5.21E+07 | 2.60E+08 | 7.54E+08 |
| PCB 52 | 6.47E+07 | 9.12E+07 | 1.02E+08 | 3.41E+08 | 9.14E+07 | 6.31E+07 | 1.96E+08 | 1.28E+08 | 2.24E+08 | 1.01E+09 |
| PCB 101 | 6.23E+06 | 1.16E+07 | 1.84E+07 | 3.20E+07 | 1.45E+07 | 1.07E+07 | 1.81E+07 | 6.58E+06 | 2.68E+07 | 3.63E+07 |
| PCB 118 | 3.44E+07 | 4.93E+07 | 1.05E+08 | 1.40E+08 | 5.56E+07 | 4.98E+07 | 5.77E+07 | 3.44E+07 | 1.55E+08 | 3.57E+08 |
| PCB 153 | 6.22E+07 | 1.14E+08 | 1.06E+08 | 2.77E+08 | 9.17E+07 | 1.07E+08 | 1.09E+08 | 7.07E+07 | 2.90E+08 | 4.68E+08 |
| PCB 105 | 5.10E+07 | NC | NC | 1.40E+08 | 1.03E+08 | 7.35E+07 | 1.58E+08 | 9.30E+07 | 2.76E+08 | 3.13E+08 |
| PCB 138 | 1.16E+08 | 2.32E+08 | 2.08E+08 | 2.81E+08 | 1.72E+08 | 1.76E+08 | 1.73E+08 | 1.44E+08 | 5.98E+08 | 9.82E+08 |
| PCB 187 | 1.75E+08 | 2.47E+08 | 2.14E+08 | 6.29E+08 | 1.99E+08 | 4.09E+08 | 2.57E+08 | 2.07E+08 | 4.16E+08 | 2.79E+09 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | NC | NC | NC | 2.27E+08 | 7.41E+07 | 1.31E+08 | 1.82E+08 | 5.88E+07 | 2.31E+08 | 3.51E+08 |
| PCB 180 | 1.75E+08 | 2.58E+08 | 2.68E+08 | 8.48E+08 | 1.87E+08 | 5.49E+08 | 2.61E+08 | 2.31E+08 | 5.23E+08 | 3.63E+09 |

NC: not calculated; LC: *Lobodon carcinophagus*; SAF: subadult female; SAM: subadult male a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LCSAM** | | | | **LWAF** | | | | | |
|  | S5 | S6 | S7 | S8 | S1 | S2 | S3 | S4 | S5 | S6 |
| HCBa | 2.80E+07 | 1.37E+07 | 7.60E+07 | 9.38E+06 | 9.86E+06 | 1.48E+07 | 1.20E+07 | 3.11E+07 | 1.37E+07 | 1.01E+07 |
| HCBb | 3.48E+06 | 1.70E+06 | 9.43E+06 | 1.16E+06 | 1.22E+06 | 1.83E+06 | 1.49E+06 | 3.86E+06 | 1.70E+06 | 1.26E+06 |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | NC | NC | NC | NC | 2.20E+05 | 1.38E+05 | 2.07E+05 | 7.72E+05 | 1.41E+05 | 3.77E+05 |
| TNa | NC | NC | NC | NC | 4.84E+07 | 6.19E+07 | 4.80E+07 | 2.21E+08 | 7.78E+07 | 5.83E+07 |
| Oxychlordanea | NC | NC | NC | NC | 2.64E+08 | 2.24E+08 | 2.30E+08 | 5.17E+08 | 1.75E+08 | 2.45E+08 |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | NC | NC | NC | NC | 1.07E+08 | 1.15E+08 | 1.15E+08 | 9.38E+07 | 6.09E+07 | 7.02E+07 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 1.67E+07 | 6.46E+07 | 1.52E+08 | 1.66E+07 | 1.67E+07 | 1.82E+07 | 3.29E+07 | 1.58E+08 | 3.66E+07 | 2.37E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | NC | NC | 2.12E+05 | 2.12E+05 | 4.72E+07 | 4.48E+07 | 5.35E+07 | 5.39E+07 | 4.17E+07 | 4.11E+07 |
| PCB 18 | 3.28E+07 | 2.57E+07 | 5.07E+07 | 6.83E+06 | 4.50E+07 | NC | NC | 9.12E+07 | 3.93E+07 | 2.82E+07 |
| PCB 28 | 1.46E+08 | 6.75E+07 | 2.47E+08 | 6.51E+06 | 2.48E+07 | 1.33E+07 | 2.40E+07 | 1.13E+08 | 5.65E+07 | 4.70E+07 |
| PCB 52 | 1.55E+08 | 7.18E+07 | 1.58E+08 | 1.86E+07 | 6.25E+07 | 2.65E+07 | 4.55E+07 | 9.61E+07 | 7.94E+07 | 1.03E+08 |
| PCB 101 | 1.09E+07 | 1.30E+07 | 2.47E+07 | 1.30E+06 | 7.65E+06 | 7.74E+06 | 8.06E+06 | 4.18E+07 | 7.86E+06 | 1.26E+07 |
| PCB 118 | 6.42E+07 | 6.47E+07 | 8.44E+07 | 7.37E+06 | 6.46E+07 | 3.60E+07 | 6.02E+07 | 1.52E+08 | 6.21E+07 | 5.74E+07 |
| PCB 153 | 7.35E+07 | 9.65E+07 | 2.17E+08 | 1.89E+07 | 8.87E+07 | 8.24E+07 | 1.16E+08 | 2.54E+08 | 1.20E+08 | 7.15E+07 |
| PCB 105 | NC | 9.20E+07 | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 138 | 1.44E+08 | 1.98E+08 | 4.15E+08 | 5.05E+07 | 1.80E+08 | 1.65E+08 | 1.79E+08 | 4.99E+08 | 2.42E+08 | 1.44E+08 |
| PCB 187 | 2.48E+08 | 2.14E+08 | 9.91E+08 | 5.73E+07 | 1.77E+08 | 1.40E+08 | 2.88E+08 | 6.13E+08 | 2.46E+08 | 1.69E+08 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | 5.88E+07 | 7.41E+07 | 2.16E+08 | 5.88E+07 | NC | NC | NC | NC | NC | NC |
| PCB 180 | 4.17E+08 | 2.81E+08 | 9.95E+08 | 5.19E+07 | 3.35E+08 | 2.58E+08 | 3.64E+08 | 4.58E+08 | 2.79E+08 | 2.08E+08 |

NC: not calculated; LC: *Lobodon carcinophagus*; LW: *Leptonychotes weddellii*; SAM: subadult male; AF: adult female a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LWAF** | | | | **LWAM** | | | | | |
|  | S7 | S8 | S9 | S10 | S1 | S2 | S3 | S4 | S5 | S6 |
| HCBa | 1.72E+07 | 1.80E+07 | 5.82E+07 | 2.18E+07 | 1.34E+08 | NC | 5.82E+06 | NC | 1.90E+07 | NC |
| HCBb | 2.13E+06 | 2.24E+06 | 7.21E+06 | 2.71E+06 | 1.67E+07 | NC | 7.21E+05 | NC | 2.35E+06 | NC |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | 4.37E+05 | 1.60E+05 | 1.05E+05 | 2.32E+05 | NC | 3.76E+05 | 7.27E+05 | NC | 4.47E+05 | 4.76E+05 |
| TNa | 9.90E+07 | 4.72E+07 | 3.68E+07 | 7.19E+07 | NC | 1.40E+08 | 2.19E+08 | 1.38E+08 | 1.51E+08 | 2.04E+08 |
| Oxychlordanea | NC | NC | 4.18E+08 | 5.29E+08 | 2.57E+09 | 1.03E+09 | 1.35E+09 | NC | 8.34E+08 | 9.33E+08 |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 5.44E+07 | 4.65E+07 | 1.40E+07 | 1.40E+08 | 4.14E+08 | 1.45E+08 | 2.92E+08 | 1.02E+08 | 1.50E+08 | 1.31E+08 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 2.46E+07 | 1.61E+07 | 1.81E+07 | 4.61E+07 | 3.64E+07 | 6.19E+07 | 8.99E+07 | 3.39E+07 | 3.43E+08 | 4.74E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 4.91E+07 | 3.44E+07 | 4.77E+06 | 8.02E+07 | 2.19E+08 | 8.57E+07 | 1.23E+08 | 6.76E+07 | 6.70E+07 | 9.13E+07 |
| PCB 18 | 5.95E+07 | NC | 5.32E+07 | NC | 6.03E+07 | 8.75E+07 | NC | 1.80E+07 | NC | 5.22E+07 |
| PCB 28 | 8.60E+07 | NC | 1.41E+08 | NC | 8.33E+07 | 1.27E+08 | 2.17E+07 | 2.02E+07 | 3.54E+07 | 4.56E+07 |
| PCB 52 | 7.12E+07 | 3.37E+07 | 1.25E+08 | 2.08E+07 | 2.61E+08 | 2.94E+08 | 5.33E+07 | 7.43E+07 | 7.33E+07 | 1.03E+08 |
| PCB 101 | 1.53E+07 | 7.86E+06 | 2.90E+07 | 5.59E+06 | 2.08E+07 | 4.31E+07 | 8.75E+06 | 1.45E+07 | 1.42E+07 | 8.55E+06 |
| PCB 118 | 6.95E+07 | 3.53E+07 | 1.58E+07 | 2.47E+07 | 2.12E+08 | 3.28E+08 | 4.86E+07 | 8.07E+07 | 6.60E+07 | 5.95E+07 |
| PCB 153 | 1.11E+08 | 7.85E+07 | 2.53E+08 | 9.50E+07 | 1.40E+08 | 4.32E+08 | 1.70E+08 | 2.20E+08 | 1.45E+08 | 2.49E+08 |
| PCB 105 | NC | NC | NC | 2.20E+07 | NC | NC | 4.55E+07 | NC | NC | 4.15E+07 |
| PCB 138 | 2.96E+08 | 1.42E+08 | 5.18E+08 | 1.31E+08 | 3.54E+08 | 9.33E+08 | 3.16E+08 | 4.84E+08 | 3.09E+08 | 3.93E+08 |
| PCB 187 | 2.81E+08 | 2.14E+08 | 4.59E+08 | 1.36E+08 | 3.64E+08 | 6.25E+08 | 3.75E+08 | 3.21E+08 | 2.81E+08 | 3.27E+08 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 180 | 2.71E+08 | 2.69E+08 | 4.11E+08 | 3.01E+08 | 4.69E+08 | 7.27E+08 | 4.22E+08 | 5.61E+08 | 3.60E+08 | 7.31E+08 |

NC: not calculated; LW: *Leptonychotes* weddellii; AF: adult female; Am: adult male; a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LWAM** | | | | | **LWSAF** | | | | |
|  | S7 | S8 | S9 | S10 | S11 | S1 | S2 | S3 | S4 | S5 |
| HCBa | NC | NC | 3.12E+07 | NC | 1.27E+07 | 1.04E+07 | 2.66E+07 | 3.11E+07 | 9.64E+06 | 1.69E+07 |
| HCBb | NC | NC | 3.87E+06 | NC | 1.57E+06 | 1.29E+06 | 3.29E+06 | 3.85E+06 | 1.20E+06 | 2.09E+06 |
| *α*-HCHa | NC | NC | NC | NC | NC | 9.48E+06 | NC | 3.33E+07 | 6.28E+06 | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | 1.17E+06 | NC | 4.11E+06 | 7.74E+05 | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | 3.70E+06 | NC | 2.30E+07 | 3.05E+06 | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | 3.18E+06 | NC | 1.98E+07 | 2.63E+06 | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | 6.23E+05 | 1.33E+06 | 9.32E+05 | 5.76E+05 | 3.05E+05 | 2.34E+05 | 8.60E+05 | 7.58E+05 | 1.13E+05 | 6.35E+05 |
| TNa | 1.47E+08 | 3.09E+08 | 3.18E+08 | 1.79E+08 | 8.70E+07 | 7.35E+07 | 2.55E+08 | 2.58E+08 | 2.77E+07 | 1.63E+08 |
| Oxychlordanea | 7.31E+08 | 1.62E+09 | 1.63E+09 | 1.15E+09 | 5.85E+08 | 5.78E+08 | 2.07E+09 | 7.20E+08 | 2.62E+08 | 1.20E+09 |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 2.07E+08 | 4.10E+08 | 1.92E+08 | 1.88E+08 | 1.37E+08 | 1.33E+08 | 2.88E+08 | 1.81E+08 | 5.76E+07 | 1.52E+08 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 1.32E+08 | 9.33E+07 | 1.38E+08 | 4.46E+07 | 2.98E+07 | 3.57E+07 | 6.46E+07 | 3.69E+07 | 1.87E+07 | 2.36E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 1.02E+08 | 1.71E+08 | 1.72E+08 | 7.53E+07 | 6.88E+07 | 5.40E+07 | 1.36E+08 | 9.99E+07 | 2.03E+07 | 7.76E+07 |
| PCB 18 | 6.92E+07 | NC | NC | NC | 3.58E+07 | 2.08E+07 | 1.95E+07 | NC | NC | 1.08E+07 |
| PCB 28 | 2.93E+08 | 4.94E+07 | 5.38E+07 | 2.03E+08 | 6.29E+07 | 3.41E+07 | 4.56E+07 | 1.59E+08 | 3.51E+07 | 3.27E+07 |
| PCB 52 | 3.53E+08 | 4.43E+07 | 5.53E+07 | 2.04E+08 | 1.32E+08 | 4.04E+07 | 2.40E+08 | NC | 3.78E+07 | 2.78E+07 |
| PCB 101 | 2.88E+07 | 1.63E+07 | 1.04E+07 | 2.58E+07 | 1.72E+07 | 7.04E+06 | 1.74E+07 | 1.12E+07 | 6.75E+06 | 1.30E+07 |
| PCB 118 | 1.29E+08 | 1.15E+08 | 8.19E+07 | 1.40E+08 | 9.07E+07 | 3.49E+07 | 7.02E+07 | 1.02E+08 | 2.93E+07 | 6.72E+07 |
| PCB 153 | 4.41E+08 | 2.87E+08 | 2.66E+08 | 6.25E+08 | 2.26E+08 | 8.41E+07 | 5.43E+08 | 3.10E+08 | 4.65E+07 | 2.24E+08 |
| PCB 105 | NC | NC | 3.45E+07 | 2.43E+08 | NC | 4.75E+07 | NC | 8.10E+07 | 1.95E+07 | 4.10E+07 |
| PCB 138 | 8.19E+08 | 4.84E+08 | 6.01E+08 | 9.27E+08 | 4.48E+08 | 1.21E+08 | 1.02E+09 | 8.21E+08 | 9.80E+07 | 4.85E+08 |
| PCB 187 | 1.00E+09 | 4.47E+08 | 2.19E+08 | 1.56E+09 | 1.07E+09 | 2.27E+08 | 4.15E+08 | 1.04E+09 | 1.38E+08 | 3.47E+08 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | NC | NC | NC | NC | NC | NC | NC | NC | NC | 1.68E+08 |
| PCB 180 | 1.16E+09 | 5.53E+08 | 4.75E+08 | 1.55E+09 | 2.48E+09 | 2.58E+08 | 1.02E+09 | 1.01E+09 | 1.85E+08 | 5.63E+08 |

NC: not calculated; LW: *Leptonychotes* weddellii; AM: adult male; SAF: subadult female; a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **LWSAM** | | | | | | **ORAF** | | | |
|  | S1 | S2 | S3 | S4 | S5 | S6 | S1 | S2 | S3 | S4 |
| HCBa | 2.90E+07 | 1.72E+07 | 1.47E+07 | 4.37E+07 | 1.46E+07 | 1.31E+07 | 4.67E+06 | 6.94E+06 | 7.98E+06 | 6.44E+06 |
| HCBb | 3.60E+06 | 2.13E+06 | 1.82E+06 | 5.42E+06 | 1.80E+06 | 1.63E+06 | 5.79E+05 | 8.61E+05 | 9.89E+05 | 7.99E+05 |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | 3.45E+05 | 1.88E+05 | 1.83E+05 | 1.48E+05 | 3.50E+05 | 2.07E+05 | 1.88E+05 | 1.55E+05 | 8.50E+04 | 2.14E+05 |
| TNa | 1.28E+08 | 7.57E+07 | 6.31E+07 | 4.39E+07 | 1.02E+08 | 9.65E+07 | 5.29E+07 | 4.33E+07 | 3.18E+07 | 4.18E+07 |
| Oxychlordanea | 5.70E+08 | 4.35E+08 | 3.76E+08 | 4.56E+08 | 5.32E+08 | 5.59E+08 | 2.69E+08 | 6.03E+08 | 2.45E+08 | 1.66E+08 |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 1.06E+08 | 9.40E+07 | 4.76E+07 | 7.44E+07 | 9.27E+07 | 8.91E+07 | 2.04E+08 | 1.01E+08 | 1.51E+08 | 1.53E+08 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDDa | 4.08E+07 | 2.93E+07 | 1.69E+07 | 2.11E+07 | 3.68E+07 | 2.60E+07 | 4.48E+07 | 2.03E+07 | 8.59E+07 | 3.73E+07 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 5.80E+07 | 6.33E+07 | 3.34E+07 | 3.97E+07 | 5.81E+07 | 5.08E+07 | 8.32E+07 | 5.45E+07 | 1.12E+08 | 7.77E+07 |
| PCB 18 | 2.92E+07 | NC | 1.37E+07 | 3.13E+07 | 6.33E+06 | 1.10E+07 | NC | 6.00E+06 | 1.87E+07 | NC |
| PCB 28 | 6.68E+07 | NC | 5.83E+07 | 9.30E+07 | 1.65E+07 | 1.94E+07 | 3.35E+07 | 1.24E+07 | 1.40E+07 | NC |
| PCB 52 | 1.36E+08 | 2.29E+07 | 5.08E+07 | 8.96E+07 | NC | NC | 3.84E+07 | 3.63E+07 | NC | 9.31E+07 |
| PCB 101 | 4.21E+07 | 4.55E+06 | 1.09E+07 | 1.88E+07 | 7.07E+06 | 5.13E+06 | 7.74E+06 | 9.57E+06 | 7.65E+06 | 3.83E+07 |
| PCB 118 | 1.16E+08 | 4.39E+07 | 3.39E+07 | 9.58E+07 | 4.23E+07 | 3.39E+07 | 3.91E+07 | 2.47E+07 | 5.32E+07 | 1.84E+08 |
| PCB 153 | 3.46E+08 | 8.15E+07 | 1.42E+08 | 4.47E+08 | 9.78E+07 | 1.19E+08 | 1.20E+08 | 2.18E+08 | 1.12E+08 | 8.91E+08 |
| PCB 105 | 8.75E+07 | 6.30E+07 | 4.70E+07 | 6.45E+07 | 6.05E+07 | NC | 2.90E+07 | 5.30E+07 | NC | 4.59E+08 |
| PCB 138 | 6.99E+08 | 1.89E+08 | 1.93E+08 | 6.11E+08 | 1.69E+08 | 1.83E+08 | 2.36E+08 | 4.13E+08 | 2.74E+08 | 1.41E+09 |
| PCB 187 | 5.05E+08 | NC | 2.26E+08 | 1.52E+09 | 1.91E+08 | 2.65E+08 | 1.55E+08 | 2.69E+08 | 3.07E+08 | 1.79E+09 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | NC | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 180 | 7.35E+08 | NC | 3.83E+08 | 9.04E+08 | 1.99E+08 | NC | 3.07E+08 | 6.58E+08 | 3.77E+08 | 2.94E+09 |

NC: not calculated; LW: *Leptonychotes* weddellii; OR: *Ommatophoca rossii*; SAM: subadult male; AF: adult female; a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A16: Continued.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **ORAF** | | **ORAM** | | | | **OO** | | |
|  | S5 | S6 | S1 | S2 | S3 | S4 | S1 | S2 | S3 |
| HCBa | 9.73E+06 | 4.15E+07 | 1.85E+07 | 7.55E+06 | 7.70E+06 | 7.91E+06 | 3.07E+09 | 3.91E+08 | 7.91E+08 |
| HCBb | 1.21E+06 | 5.15E+06 | 2.29E+06 | 9.36E+05 | 9.54E+05 | 9.81E+05 | 3.80E+08 | 4.85E+07 | 9.81E+07 |
| *α*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *α*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHa | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *γ*-HCHb | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Heptachlora | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| CNa | 1.27E+05 | 1.02E+06 | 1.39E+05 | 9.64E+04 | 1.10E+05 | 1.65E+05 | 1.70E+06 | 1.14E+05 | 4.32E+05 |
| TNa | 1.94E+07 | 3.66E+08 | 2.66E+07 | 2.88E+07 | 2.27E+07 | 2.84E+07 | 1.25E+09 | 2.58E+08 | 3.21E+08 |
| Oxychlordanea | 3.03E+08 | 2.42E+09 | 4.84E+08 | 2.11E+08 | 3.10E+08 | 1.92E+08 | 3.29E+09 | 3.73E+08 | 9.73E+08 |
| *α*-endosulfana | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *o,p’*-DDEa | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p*’-DDEa | 9.70E+07 | 5.52E+08 | 1.44E+08 | 1.08E+08 | 1.08E+08 | 9.76E+07 | 4.39E+09 | 2.83E+08 | 8.41E+08 |
| *o,p’*-DDDa | NC | NC | NC | NC | NC | NC | 2.23E+08 | 1.71E+07 | 4.42E+07 |
| *p,p’*-DDDa | 2.47E+07 | 1.40E+08 | 2.31E+07 | 1.84E+07 | 2.18E+07 | 3.27E+07 | 3.30E+09 | 3.05E+08 | 6.39E+08 |
| *o,p'*-DDTa | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *p,p’*-DDTa | 4.32E+07 | 2.83E+08 | 4.52E+07 | 3.45E+07 | 4.04E+07 | 5.29E+07 | 7.11E+08 | 1.22E+08 | 1.43E+08 |
| PCB 18 | 9.67E+06 | NC | 1.73E+07 | 2.00E+06 | 8.33E+06 | NC | 1.53E+07 | 2.82E+07 | 2.70E+07 |
| PCB 28 | 2.56E+07 | 4.29E+07 | 6.05E+07 | 1.14E+07 | 2.32E+07 | 1.33E+07 | 9.14E+07 | 8.57E+07 | 1.02E+08 |
| PCB 52 | 1.90E+07 | 1.65E+08 | 1.26E+08 | 2.67E+07 | 4.14E+07 |  | 1.17E+09 | 2.12E+08 | 5.51E+08 |
| PCB 101 | 5.51E+06 | 3.27E+07 | 1.79E+07 | 5.25E+06 | 9.83E+06 | 5.59E+06 | 5.19E+08 | 4.93E+07 | 1.40E+08 |
| PCB 118 | 2.25E+07 | 2.10E+08 | 8.86E+07 | 2.53E+07 | 4.25E+07 | 2.30E+07 | 2.53E+09 | 2.38E+08 | 5.79E+08 |
| PCB 153 | 1.02E+08 | 5.35E+08 | 1.57E+08 | 1.01E+08 | 1.25E+08 | 8.80E+07 | 7.30E+09 | 8.57E+08 | 2.48E+09 |
| PCB 105 | 4.45E+07 | 1.19E+08 | 6.95E+07 | 4.50E+07 | 4.65E+07 | 3.20E+07 | 1.32E+09 | 2.35E+08 | 3.79E+08 |
| PCB 138 | 1.93E+08 | 9.88E+08 | 3.32E+08 | 2.22E+08 | 2.32E+08 | 1.79E+08 | 1.38E+10 | 1.36E+09 | 4.26E+09 |
| PCB 187 | 1.91E+08 | 6.37E+08 | 3.73E+08 | 1.61E+08 | 3.34E+08 | 1.90E+08 | 8.13E+09 | 1.43E+09 | 2.59E+09 |
| PCB 128 | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| PCB 156 | NC | NC | NC | NC | NC | NC | 2.65E+09 | 5.20E+08 | 7.60E+08 |
| PCB 180 | 2.08E+08 | 1.18E+09 | 3.17E+08 | 2.74E+08 | 2.47E+08 | 2.48E+08 | 1.83E+10 | 4.03E+09 | 6.93E+09 |

NC: not calculated; OR: *Ommatophoca rossii*; OO: Orcinus orca AF: adult female; AM: adult male; a: Galbán-Malagón et al., (2013); b: Bigot et al., (2016)

Table A17: Ln concentration-trophic level linear relationship parameters and TMFs for OCPs and PCBs in the Antarctic.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **With phytoplankton** | | | | **Without phytoplankton** | | | |
|  | Slope | TMF | R2 | p value | Slope | TMF | R2 | p value |
| *Trans*-chlordane | -0.17 | 0.84 | 0.05 | >0.05 | 0.32 | 1.38 | 0.38 | >0.05 |
| *Cis*-chlordane | 0.50 | 1.65 | 0.17 | >0.05 | 1.03 | **2.81** | 0.51 | 0.019 |
| *Trans*-nonachlor | 0.92 | **2.52** | 0.46 | 0.006 | 1.38 | **3.96** | 0.73 | 0.007 |
| Cis-nonachlor | 1.70 | **5.48** | 0.72 | <0.001 | 2.06 | **7.82** | 0.86 | <0.001 |
| PCB 101 | -0.05 | 0.95 | 0.003 | >0.05 | 0.25 | 1.28 | 0.06 | >0.05 |
| PCB 118 | 0.12 | 1.13 | 0.02 | >0.05 | 0.40 | 1.49 | 0.15 | >0.05 |
| PCB 153 | 0.38 | 1.46 | 0.14 | >0.05 | 0.66 | **1.93** | 0.29 | 0.049 |
| PCB 105 | -0.15 | 0.86 | 0.02 | >0.05 | 0.06 | 1.06 | 0.003 | >0.05 |
| PCB 138 | 0.41 | 1.51 | 0.16 | >0.05 | 0.67 | **1.96** | 0.29 | 0.049 |

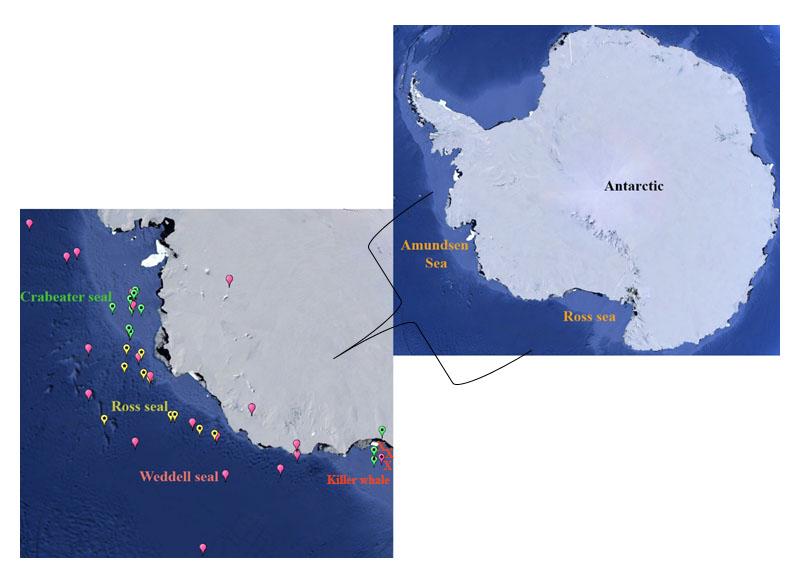


Figure A1: Map of Antarctic showing locations of the sampled seals.





Figure A2: Photos taken during the sampling campaign.





Figure A2: Continued.

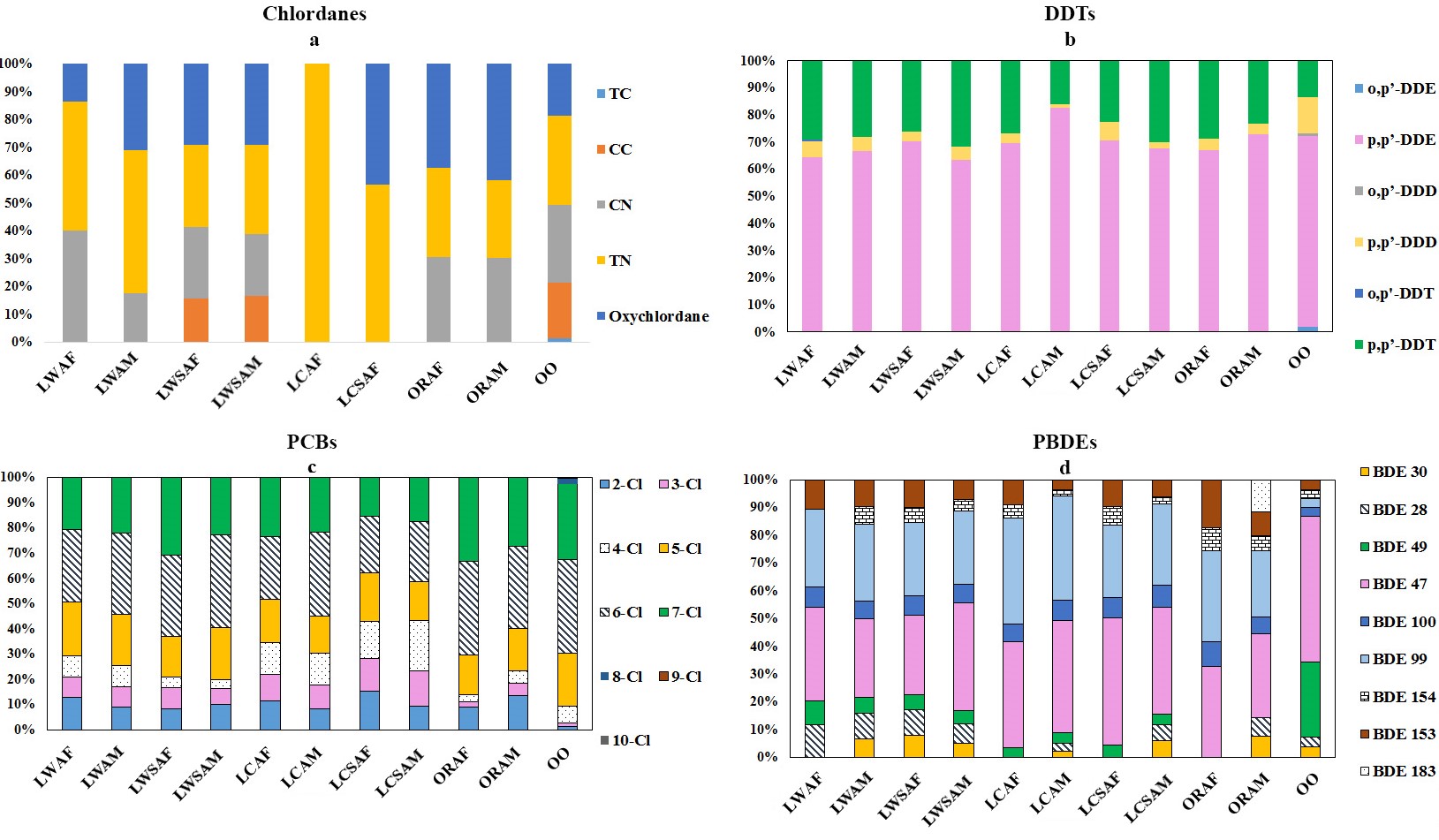


Figure A3: Profiles of chlordanes (A), DDTs (B), PCBs (C) and PBDEs (D) in the blubber samples of seals and killer whale from the Antarctic. LW: *Leptonychotes weddellii*; LC: *Lobodon carcinophagus*; OR: *Ommatophoca rossii*; OO: Orcinus orca; AF: adult female; AM: adult male; SAF: subadult female; SAM: subadult male.

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