

## Attachment 12 Wildlife Exposure Dose Calculations

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## Acronyms

Acronym	Definition
<b>COPC</b>	chemical of potential concern
<b>dw</b>	dry weight
<b>nd</b>	no data
<b>PCB</b>	polychlorinated biphenyl
<b>TEQ</b>	toxic equivalent
<b>TRV</b>	toxicity reference value

**Table 1. COPC concentrations in great blue heron food**

CHEMICAL	CONCENTRATION IN PREY (mg/kg dw)					FRACTION IN DIET <sup>a</sup>					CONCENTRATION IN FOOD (mg/kg)
	SHINER SURFPERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	CRAB	SHINER SURFPERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	CRAB	
Chromium	0.82	4.4	nd	0.40	0.30	0.317	0.317	0	0.317	0.05	1.8
Lead	0.53	1.7	nd	0.30	0.53	0.317	0.317	0	0.317	0.05	0.83
Mercury	0.15	0.070	0.14	0.15	0.29	0.238	0.238	0.238	0.238	0.05	0.14
Total PCBs	14	10	3.4	5.0	6.0	0.238	0.238	0.238	0.238	0.05	8.0
PCB TEQs	$7.2 \times 10^{-4}$	$4.2 \times 10^{-4}$	nd	$1.2 \times 10^{-4}$	$3.6 \times 10^{-4}$	0.317	0.317	0	0.317	0.05	$4.2 \times 10^{-4}$
Total DDTs	1.0	0.76	0.21	0.50	0.61	0.238	0.238	0.238	0.238	0.05	0.57

<sup>a</sup> For COPCs with no data for salmon, the fraction of shiner surfperch, English sole, and sculpin in the diet was assumed to be equal.

dw – dry weight

nd – no data

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 2. COPC concentrations in osprey food**

CHEMICAL	CONCENTRATION IN PREY (mg/kg dw)			FRACTION IN DIET <sup>a</sup>			CONCENTRATION IN FOOD (mg/kg)
	SHINER SURPPERCH	ENGLISH SOLE	CHINOOK SALMON	SHINER SURPPERCH	ENGLISH SOLE	CHINOOK SALMON	
Chromium	0.82	4.4	nd	0.62	0.38	0	2.2
Lead	0.53	1.7	nd	0.62	0.38	0	0.97
Mercury	0.15	0.070	0.14	0.34	0.21	0.45	0.13
Total PCBs	14	10	3.4	0.34	0.21	0.45	8.4
PCB TEQs	$7.2 \times 10^{-4}$	$4.2 \times 10^{-4}$	nd	0.62	0.38	0	$6.1 \times 10^{-4}$
Total DDTs	1.0	0.76	0.21	0.34	0.21	0.45	0.59

<sup>a</sup> For COPCs with no data for salmon, the fraction of salmon in the diet was reassigned to shiner surfperch and English sole in proportion to the fraction of those species in the diet (i.e., 62% of the salmon fraction was added to perch, and 38% was added to English sole).

dw – dry weight

nd – no data

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 3. COPC concentrations in river otter food**

CHEMICAL	CONCENTRATION IN PREY (mg/kg dw)							FRACTION IN DIET <sup>a, b</sup>							CONCENTRATION IN FOOD (mg/kg)
	SHINER SURF-PERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	CRAB	CLAM	MUSSEL	SHINER SURF-PERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	CRAB	CLAM	MUSSEL	
Arsenic	4.2	13	nd	4.0	25	25	5.9	0.293	0.293	0	0.293	0.10	0.01	0.01	9.0
Cobalt	0.18	0.412	nd	0.13	0.39	2.9	0.41	0.293	0.293	0	0.293	0.10	0.01	0.01	0.28
Mercury	0.15	0.070	0.14	0.15	0.29	0.12	0.094	0.22	0.22	0.22	0.22	0.10	0.01	0.01	0.14
Selenium	0.77	0.82	nd	0.87	1.2	2.0	nd	0.293	0.293	0	0.293	0.10	0.02	0	0.88
Total PCBs	14	10	3.4	5.0	6.0	4.0	0.27	0.22	0.22	0.22	0.22	0.10	0.01	0.01	7.8
PCB TEQs	$1.6 \times 10^{-4}$	$8.2 \times 10^{-5}$	nd	$3.8 \times 10^{-5}$	$5.0 \times 10^{-5}$	$2.7 \times 10^{-5}$	nd	0.293	0.293	0	0.293	0.10	0.02	0	$8.8 \times 10^{-5}$

<sup>a</sup> For COPCs with no data for salmon, the fraction of shiner surfperch, English sole, and sculpin in the diet was assumed to be equal.

<sup>b</sup> For COPCs with no mussel data, the fraction of diet normally assigned to mussel was assigned to crab.

dw – dry weight

nd – no data

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 4. COPC concentrations in harbor seal food**

CHEMICAL	CONCENTRATION IN PREY (mg/kg dw)				FRACTION IN DIET <sup>a</sup>				CONCENTRATION IN FOOD (mg/kg)
	SHINER SURFPERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	SHINER SURFPERCH	ENGLISH SOLE	CHINOOK SALMON	SCULPIN	
Mercury	0.15	0.070	0.14	0.15	0.25	0.25	0.25	0.25	0.13
Total PCBs	14	10	3.4	5.0	0.25	0.25	0.25	0.25	8.1
PCB TEQs	$1.6 \times 10^{-4}$	$8.2 \times 10^{-5}$	nd	$3.8 \times 10^{-5}$	0.333	0.333	0	0.333	$9.3 \times 10^{-5}$

<sup>a</sup> For COPCs with no data for salmon, the fraction of shiner surfperch, English sole, and sculpin in the diet was assumed to be equal.

dw – dry weight

nd – no data

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 5. Calculated COPC exposure doses for spotted sandpiper**

CHEMICAL AND EXPOSURE SCENARIO <sup>a</sup>	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>c</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw) <sup>b</sup>	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Arsenic									
Area 1/high	23	9.7 x 10 <sup>-4</sup>	36	0.0074	0.0076	0.0013	1	0.047	4.6
Area 1/high and poor	21	9.7 x 10 <sup>-4</sup>	18	0.0074	0.0076	0.0013	1	0.047	3.8
Area 2/high	25	9.3 x 10 <sup>-4</sup>	49	0.0074	0.0076	0.0013	1	0.047	5.3
Area 2/high and poor	21	9.3 x 10 <sup>-4</sup>	18	0.0074	0.0076	0.0013	1	0.047	3.8
Area 3/high	18	5.3 x 10 <sup>-4</sup>	20	0.0074	0.0076	0.0013	1	0.047	3.4
Area 3/high and poor	26	5.3 x 10 <sup>-4</sup>	60	0.0074	0.0076	0.0013	1	0.047	5.8
Cadmium eggshell thinning TRV									
Area 1/high	0.56	5.4 x 10 <sup>-5</sup>	0.45	0.0067	0.0071	0.0012	1	0.043	0.10
Area 1/high and poor	0.56	5.4 x 10 <sup>-5</sup>	0.65	0.0067	0.0071	0.0012	1	0.043	0.11
Area 2/high	0.40	5.5 x 10 <sup>-5</sup>	1.0	0.0067	0.0071	0.0012	1	0.043	0.090
Area 2/high and poor	0.49	5.5 x 10 <sup>-5</sup>	0.93	0.0067	0.0071	0.0012	1	0.043	0.10
Area 3/high	0.64	1.6 x 10 <sup>-5</sup>	0.62	0.0067	0.0071	0.0012	1	0.043	0.12
Area 3/high and poor	0.64	1.6 x 10 <sup>-5</sup>	7.8	0.0067	0.0071	0.0012	1	0.043	0.32
Cadmium growth TRV									
Area 1/high	0.56	5.4 x 10 <sup>-5</sup>	0.45	0.0067	0.0071	0.0012	1	0.043	0.10
Area 1/high and poor	0.56	5.4 x 10 <sup>-5</sup>	0.65	0.0067	0.0071	0.0012	1	0.043	0.11
Area 2/high	0.40	5.5 x 10 <sup>-5</sup>	1.0	0.0067	0.0071	0.0012	1	0.043	0.090
Area 2/high and poor	0.49	5.5 x 10 <sup>-5</sup>	0.93	0.0067	0.0071	0.0012	1	0.043	0.10
Area 3/high	0.64	1.6 x 10 <sup>-5</sup>	0.62	0.0067	0.0071	0.0012	1	0.043	0.12
Area 3/high and poor	0.64	1.6 x 10 <sup>-5</sup>	7.8	0.0067	0.0071	0.0012	1	0.043	0.32
Chromium									
Area 1/high	3.0	6.1 x 10 <sup>-4</sup>	32	0.0067	0.0071	0.0012	1	0.043	1.4
Area 1/high and poor	3.0	6.1 x 10 <sup>-4</sup>	30	0.0067	0.0071	0.0012	1	0.043	1.3
Area 2/high	18	7.3 x 10 <sup>-4</sup>	43	0.0067	0.0071	0.0012	1	0.043	4.0
Area 2/high and poor	51	7.3 x 10 <sup>-4</sup>	32	0.0067	0.0071	0.0012	1	0.043	8.8

**Table 5. Calculated COPC exposure doses for spotted sandpiper, continued**

CHEMICAL AND EXPOSURE SCENARIO <sup>a</sup>	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>c</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw) <sup>b</sup>	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Area 3/high	5.0	1.1 x 10 <sup>-3</sup>	31	0.0067	0.0071	0.0012	1	0.043	1.6
Area 3/high and poor	5.0	1.1 x 10 <sup>-3</sup>	120	0.0067	0.0071	0.0012	1	0.043	4.1
<b>Cobalt</b>									
Area 1/high	1.8	2.2 x 10 <sup>-4</sup>	9.0	0.0067	0.0071	0.0012	1	0.043	0.53
Area 1/high and poor	1.8	2.2 x 10 <sup>-4</sup>	8.0	0.0067	0.0071	0.0012	1	0.043	0.50
Area 2/high	2.0	2.5 x 10 <sup>-4</sup>	9.5	0.0067	0.0071	0.0012	1	0.043	0.58
Area 2/high and poor	2.2	2.5 x 10 <sup>-4</sup>	8.0	0.0067	0.0071	0.0012	1	0.043	0.57
Area 3/high	2.2	4.6 x 10 <sup>-4</sup>	8.0	0.0067	0.0071	0.0012	1	0.043	0.57
Area 3/high and poor	2.2	4.6 x 10 <sup>-4</sup>	10	0.0067	0.0071	0.0012	1	0.043	0.62
<b>Copper</b>									
Area 1/high	120	0.0015	94	0.0067	0.0071	0.0012	1	0.043	21
Area 1/high and poor	120	0.0015	80	0.0067	0.0071	0.0012	1	0.043	21
Area 2/high	140	0.0016	120	0.0067	0.0071	0.0012	1	0.043	25
Area 2/high and poor	140	0.0016	79	0.0067	0.0071	0.0012	1	0.043	24
Area 3/high	70	0.0023	63	0.0067	0.0071	0.0012	1	0.043	13
Area 3/high and poor	70	0.0023	730	0.0067	0.0071	0.0012	1	0.043	31
<b>Lead</b>									
Area 1/high	31	3.8 x 10 <sup>-4</sup>	90	0.0074	0.0076	0.0013	1	0.047	7.4
Area 1/high and poor	31	3.8 x 10 <sup>-4</sup>	90	0.0074	0.0076	0.0013	1	0.047	7.4
Area 2/high	15	4.9 x 10 <sup>-4</sup>	160	0.0074	0.0076	0.0013	1	0.047	6.8
Area 2/high and poor	660	4.9 x 10 <sup>-4</sup>	96	0.0074	0.0076	0.0013	1	0.047	110
Area 3/high	5.6	8.9 x 10 <sup>-4</sup>	90	0.0074	0.0076	0.0013	1	0.047	3.4
Area 3/high and poor	5.6	8.9 x 10 <sup>-4</sup>	1000	0.0074	0.0076	0.0013	1	0.047	29
<b>Mercury</b>									
Area 1/high	0.10	2.0 x 10 <sup>-6</sup>	0.17	0.0074	0.0076	0.0013	1	0.047	0.020
Area 1/high and poor	0.10	2.0 x 10 <sup>-6</sup>	0.16	0.0074	0.0076	0.0013	1	0.047	0.020
Area 2/high	0.066	2.0 x 10 <sup>-4</sup>	0.43	0.0074	0.0076	0.0013	1	0.047	0.022
Area 2/high and poor	0.070	2.0 x 10 <sup>-4</sup>	0.29	0.0074	0.0076	0.0013	1	0.047	0.019
Area 3/high	0.50	4.3 x 10 <sup>-6</sup>	0.60	0.0074	0.0076	0.0013	1	0.047	0.095

**Table 5. Calculated COPC exposure doses for spotted sandpiper, continued**

CHEMICAL AND EXPOSURE SCENARIO <sup>a</sup>	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>c</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw) <sup>b</sup>	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Area 3/high and poor	0.50	4.3 x 10 <sup>-6</sup>	0.40	0.0074	0.0076	0.0013	1	0.047	0.090
<b>Nickel</b>									
Area 1/high	3.5	7.1 x 10 <sup>-4</sup>	21	0.0067	0.0071	0.0012	1	0.043	1.1
Area 1/high and poor	3.5	7.1 x 10 <sup>-4</sup>	30	0.0067	0.0071	0.0012	1	0.043	1.4
Area 2/high	5.8	8.2 x 10 <sup>-4</sup>	22	0.0067	0.0071	0.0012	1	0.043	1.5
Area 2/high and poor	5.3	8.2 x 10 <sup>-4</sup>	20	0.0067	0.0071	0.0012	1	0.043	1.4
Area 3/high	7.4	1.3 x 10 <sup>-3</sup>	22	0.0067	0.0071	0.0012	1	0.043	1.8
Area 3/high and poor	7.4	1.3 x 10 <sup>-3</sup>	90	0.0067	0.0071	0.0012	1	0.043	3.7
<b>Selenium</b>									
Area 1/high	1.9	2.7 x 10 <sup>-4</sup>	0.59	0.0074	0.0076	0.0013	1	0.047	0.32
Area 1/high and poor	1.9	2.7 x 10 <sup>-4</sup>	0.56	0.0074	0.0076	0.0013	1	0.047	0.31
Area 2/high	1.6	1.6 x 10 <sup>-4</sup>	7.2	0.0074	0.0076	0.0013	1	0.047	0.45
Area 2/high and poor	1.8	1.6 x 10 <sup>-4</sup>	3.0	0.0074	0.0076	0.0013	1	0.047	0.37
Area 3/high	1.4	1.6 x 10 <sup>-4</sup>	7.0	0.0074	0.0076	0.0013	1	0.047	0.41
Area 3/high and poor	1.4	1.6 x 10 <sup>-4</sup>	6.6	0.0074	0.0076	0.0013	1	0.047	0.40
<b>Zinc</b>									
Area 1/high	190	0.0030	180	0.0067	0.0071	0.0012	1	0.043	35
Area 1/high and poor	190	0.0030	170	0.0067	0.0071	0.0012	1	0.043	34
Area 2/high	300	0.0030	240	0.0067	0.0071	0.0012	1	0.043	53
Area 2/high and poor	380	0.0030	180	0.0067	0.0071	0.0012	1	0.043	64
Area 3/high	270	0.0046	150	0.0067	0.0071	0.0012	1	0.043	46
Area 3/high and poor	270	0.0046	710	0.0067	0.0071	0.0012	1	0.043	62
<b>Vanadium</b>									
Area 1/high	6.4	0.0014	53	0.0067	0.0071	0.0012	1	0.043	2.5
Area 1/high and poor	6.4	0.0014	52	0.0067	0.0071	0.0012	1	0.043	2.4
Area 2/high	10	0.0015	58	0.0067	0.0071	0.0012	1	0.043	3.2
Area 2/high and poor	9.8	0.0015	55	0.0067	0.0071	0.0012	1	0.043	3.1
Area 3/high	9.6	0.0019	57	0.0067	0.0071	0.0012	1	0.043	3.1
Area 3/high and poor	9.6	0.0019	59	0.0067	0.0071	0.0012	1	0.043	3.1



**Table 5. Calculated COPC exposure doses for spotted sandpiper, continued**

CHEMICAL AND EXPOSURE SCENARIO <sup>a</sup>	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>c</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw) <sup>b</sup>	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
BEHP									
Area 1/high	2.9	0.0035	0.12	0.0074	0.0076	0.0013	1	0.047	0.46
Area 1/high and poor	2.9	0.0035	2.5	0.0074	0.0076	0.0013	1	0.047	0.53
Area 2/high	14	0.024	2.7	0.0074	0.0076	0.0013	1	0.047	2.3
Area 2/high and poor	14	0.024	2.1	0.0074	0.0076	0.0013	1	0.047	2.3
Area 3/high	61	1.8 x 10 <sup>-4</sup>	0.41	0.0074	0.0076	0.0013	1	0.047	9.6
Area 3/high and poor	61	1.8 x 10 <sup>-4</sup>	0.41	0.0074	0.0076	0.0013	1	0.047	9.6
Total PCBs									
Area 1/high	1.5	1.7 x 10 <sup>-6</sup>	0.34	0.0074	0.0076	0.0013	1	0.047	0.25
Area 1/high and poor	1.5	1.7 x 10 <sup>-6</sup>	0.33	0.0074	0.0076	0.0013	1	0.047	0.25
Area 2/high	5.9	1.9 x 10 <sup>-6</sup>	2.5	0.0074	0.0076	0.0013	1	0.047	1.0
Area 2/high and poor	3.8	1.9 x 10 <sup>-6</sup>	1.5	0.0074	0.0076	0.0013	1	0.047	0.64
Area 3/high	2.7	1.9 x 10 <sup>-6</sup>	0.72	0.0074	0.0076	0.0013	1	0.047	0.45
Area 3/high and poor	3.4	1.9 x 10 <sup>-6</sup>	1.1	0.0074	0.0076	0.0013	1	0.047	0.57
PCB TEQs									
Area 1/high	1.6 x 10 <sup>-4</sup>	0	3.7 x 10 <sup>-5</sup>	0.0074	0.0076	0.0013	1	0.047	2.6 x 10 <sup>-5</sup>
Area 1/high and poor	1.6 x 10 <sup>-4</sup>	0	3.4 x 10 <sup>-5</sup>	0.0074	0.0076	0.0013	1	0.047	2.6 x 10 <sup>-5</sup>
Area 2/high	5.6 x 10 <sup>-4</sup>	0	4.3 x 10 <sup>-3</sup>	0.0074	0.0076	0.0013	1	0.047	2.1 x 10 <sup>-4</sup>
Area 2/high and poor	5.6 x 10 <sup>-4</sup>	0	1.8 x 10 <sup>-3</sup>	0.0074	0.0076	0.0013	1	0.047	1.4 x 10 <sup>-4</sup>
Area 3/high	3.9 x 10 <sup>-4</sup>	0	9.6 x 10 <sup>-5</sup>	0.0074	0.0076	0.0013	1	0.047	6.4 x 10 <sup>-5</sup>
Area 3/high and poor	3.9 x 10 <sup>-4</sup>	0	3.0 x 10 <sup>-3</sup>	0.0074	0.0076	0.0013	1	0.047	1.4 x 10 <sup>-4</sup>

<sup>a</sup> Six exposure scenarios were evaluated; in each of three exposure areas, foraging in high-quality habitat only and foraging in both high- and poor-quality habitat were evaluated. These exposure scenarios are described in detail in Section A.5.1.3.1.

<sup>b</sup> Sandpiper food consists entirely of benthic invertebrates.

<sup>c</sup> Consumption rates are for females if the TRV endpoint is reproduction and for average of males and females if the TRV endpoint is for growth or survival.

bw – body weight

dw – dry weight

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 6. Calculated COPC exposure doses for great blue heron**

CHEMICAL AND EXPOSURE SCENARIO	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>a</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw)	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Chromium	1.8	$7.1 \times 10^{-4}$	70	0.10	0.11	0.0020	0.5	2.4	0.067
Lead	0.83	$5.0 \times 10^{-4}$	600	0.093	0.10	0.0019	0.5	2.2	0.27
Mercury	0.14	$2.7 \times 10^{-6}$	0.40	0.093	0.10	0.0019	0.5	2.2	0.0031
Total PCBs	8.0	$1.6 \times 10^{-6}$	0.72	0.093	0.10	0.0019	0.5	2.2	0.17
PCB TEQs	$4.2 \times 10^{-4}$	0	$9.2 \times 10^{-4}$	0.093	0.10	0.0019	0.5	2.2	$9.3 \times 10^{-6}$
Total DDTs	0.57	0	0.29	0.093	0.10	0.0019	0.5	2.2	0.012

<sup>a</sup> Consumption rates are for females if the TRV endpoint is reproduction and for an average of males and females if the TRV endpoint is for growth or survival.

bw – body weight

dw – dry weight

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 7. Calculated COPC exposure doses for osprey**

CHEMICAL AND EXPOSURE SCENARIO	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>a</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw)	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Chromium	2.0	$7.1 \times 10^{-4}$	70	0.083	0.083	$8.3 \times 10^{-4}$	0.75	1.7	0.11
Lead	0.97	$5.0 \times 10^{-4}$	600	0.091	0.087	$9.1 \times 10^{-4}$	0.75	1.8	0.26
Mercury	0.13	$2.7 \times 10^{-6}$	0.40	0.091	0.087	$9.1 \times 10^{-4}$	0.75	1.8	0.0051
Total PCBs	8.4	$1.6 \times 10^{-6}$	0.72	0.091	0.087	$9.1 \times 10^{-4}$	0.75	1.8	0.32
PCB TEQs	$6.1 \times 10^{-4}$	0	$9.2 \times 10^{-4}$	0.091	0.087	$9.1 \times 10^{-4}$	0.75	1.8	$2.3 \times 10^{-5}$
Total DDTs	0.59	0	0.29	0.091	0.087	$9.1 \times 10^{-4}$	0.75	1.8	0.022

<sup>a</sup> Consumption rates are for females if the TRV endpoint is reproduction and for an average of males and females if the TRV endpoint is for growth or survival

bw – body weight

dw – dry weight

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 8. Calculated COPC exposure doses for river otter**

CHEMICAL AND EXPOSURE SCENARIO	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>a</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw)	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Arsenic	9.0	$8.8 \times 10^{-4}$	30	0.26	0.64	0.0052	1	7.9	0.32
Cobalt	0.28	$2.7 \times 10^{-4}$	10	0.28	0.68	0.0056	1	8.6	0.016
Mercury	0.14	$2.7 \times 10^{-6}$	0.30	0.28	0.68	0.0056	1	8.6	0.0048
Selenium	0.88	$2.7 \times 10^{-4}$	5.0	0.28	0.68	0.0056	1	8.6	0.032
Total PCBs	7.8	$1.6 \times 10^{-6}$	0.98	0.26	0.64	0.0052	1	7.9	0.26
PCB TEQs	$8.8 \times 10^{-5}$	0	$7.2 \times 10^{-5}$	0.26	0.64	0.0052	1	7.9	$2.9 \times 10^{-6}$

<sup>a</sup> Consumption rates are for females if the TRV endpoint is reproduction and for an average of males and females if the TRV endpoint is for growth or survival.

bw – body weight

dw – dry weight

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient

**Table 9. Calculated COPC exposure doses for harbor seal**

CHEMICAL AND EXPOSURE SCENARIO	CONCENTRATION IN MEDIA			CONSUMPTION RATE <sup>a</sup>			SITE USE FACTOR	BODY WEIGHT (kg)	EXPOSURE DOSE (mg/kg bw/day)
	FOOD (mg/kg dw)	WATER (mg/L)	SEDIMENT (mg/kg dw)	FOOD (kg/day)	WATER (L/day)	SEDIMENT (kg/day)			
Mercury	0.13	$2.7 \times 10^{-6}$	0.30	0.60	5.1	0.012	0.33	81	$3.3 \times 10^{-4}$
Total PCBs	8.1	$1.6 \times 10^{-6}$	0.98	0.58	4.9	0.012	0.33	77	0.020
PCB TEQs	$9.3 \times 10^{-5}$	0	$7.2 \times 10^{-5}$	0.58	4.9	0.012	0.33	77	$2.3 \times 10^{-7}$

<sup>a</sup> Consumption rates are for females if the TRV endpoint is reproduction and for an average of males and females if the TRV endpoint is for growth or survival.

bw – body weight

dw – dry weight

PCB – polychlorinated biphenyl

TEQ – toxic equivalency quotient