

Results of 1998 Research on Effects of Endocrine Disrupting Chemicals on Wildlife (Whales – 1)

(Concentration per wet weight)

No.	Names of species	Specimen collection site	Gender (M: Male, F: Female)	Age	Specimen	Lipid	Polychlorinated biphenyls (PCBs)												Hexachlorobenzene (HCB)	Hexachlorocyclohexane										
							1													2										
							2													12										
SPEED'98 No.						4												12												
Unit						%												μg/kg-wet												
1	Fin whales	Yamaguchi Pref.	F	A	Fat	25	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0	<5	<5	<10	<10	<10	<10	0
2	Minke whales	Niigata Pref.	F	J	Fat, liver	42	<50	<50	<50	170	530	660	<50	<50	<50	<50	<50	<50	<50	<50	1,360	448	72	1,550	30	<10	<10	<10	1,652	
3	Mesoplodon stejnegeri	Niigata Pref.	M	A	Fat	88	<50	<50	310	3,750	13,300	22,300	8,370	920	<50	<50	<50	<50	<50	48,950	200	30	390	<10	<10	<10	<10	<10	420	
4	Mesoplodon stejnegeri	Yamagata Pref.	M	S	Fat, liver	78	<50	<50	<50	600	1,860	2,820	550	<50	<50	<50	<50	<50	<50	5,830	546	50	1,680	<10	<10	<10	<10	<10	1,730	
5	Mesoplodon stejnegeri	Niigata Pref.	M	S	Fat, liver	86	<50	<50	<50	480	1,800	2,480	520	<50	<50	<50	<50	<50	<50	5,280	342	20	660	<10	<10	<10	<10	<10	680	
6	Mesoplodon stejnegeri	Aomori Pref.	M	S	Fat, liver	77	<50	<50	<50	380	1,630	2,360	430	<50	<50	<50	<50	<50	<50	4,800	319	62	870	<10	<10	<10	<10	<10	932	
7	Mesoplodon stejnegeri	Ishikawa Pref.	F	A	Fat, liver	81	<50	<50	<50	230	1,090	1,550	560	<50	<50	<50	<50	<50	<50	3,430	290	40	460	<10	<10	<10	<10	<10	500	
8	Mesoplodon stejnegeri	Tottori Pref.	F	A	Fat, liver	70	<50	<50	<50	380	1,440	2,330	590	<50	<50	<50	<50	<50	<50	4,740	348	64	810	<10	<10	<10	<10	<10	874	
9	Mesoplodon stejnegeri	Hokkaido	F	AL	Fat, liver	81	<50	<50	<50	260	890	1,290	450	<50	<50	<50	<50	<50	<50	2,890	299	40	640	<10	<10	<10	<10	<10	680	
10	Mesoplodon stejnegeri	Niigata Pref.	F	Pr	Fat	78	<50	<50	<50	170	930	1,790	550	<50	<50	<50	<50	<50	<50	3,440	236	30	260	<10	<10	<10	<10	<10	290	
11	Mesoplodon stejnegeri	Yamagata Pref.	F	S	Fat, liver	64	<50	<50	<50	210	990	1,170	190	<50	<50	<50	<50	<50	<50	2,560	277	40	540	<10	<10	<10	<10	<10	580	
12	Mesoplodon stejnegeri	Niigata Pref.	F	J	Fat, liver	89	<50	<50	<50	150	900	1,000	160	<50	<50	<50	<50	<50	<50	2,210	282	70	520	<10	<10	<10	<10	<10	590	
13	Mesoplodon carlhubbsi	Iwate Pref.	F	N	Fat, liver	82	<50	<50	90	1,300	3,330	3,290	630	<50	<50	<50	<50	<50	<50	8,640	395	20	70	<10	<10	<10	<10	<10	90	
14	Blainville's beaked whale	Aichi Pref.	F	AL	Fat, liver	71	<50	<50	<50	<50	300	550	160	<50	<50	<50	<50	<50	<50	1,010	68	<10	30	<10	<10	<10	<10	<10	30	
15	Blainville's beaked whale	Aichi Pref.	F	N	Fat, liver	83	<50	<50	70	570	1,920	2,060	410	<50	<50	<50	<50	<50	<50	5,030	300	20	60	<10	<10	<10	<10	<10	80	
16	Feral dolphin	Iwate Pref.	M	S	Fat, liver	67	<50	<50	<50	220	810	3,620	1,330	70	<50	<50	<50	<50	<50	6,050	116	24	270	<10	<10	<10	<10	<10	294	
17	Feral dolphin	Kanagawa Pref.	F	Pr	Fat, liver	62	<50	<50	60	180	420	1,550	1,510	450	<50	<50	<50	<50	<50	4,170	61	<10	30	<10	<10	<10	<10	<10	30	
18	Pacific white-sided dolphin	Ibaraki Pref.	M	N	Fat, liver	20	<50	<50	100	1,200	3,050	5,770	1,300	<50	<50	<50	<50	<50	<50	11,420	301	10	140	<10	<10	<10	<10	<10	150	
19	Pacific white-sided dolphin	Niigata Pref.	F	S	Fat, liver	65	<50	<50	<50	710	3,010	6,510	1,730	120	<50	<50	<50	<50	<50	12,080	549	117	1,020	30	<10	<10	<10	<10	1,167	
20	Melon-headed whale	Shizuoka Pref.	M	A	Fat, liver	-	<50	<50	<50	420	1,990	5,620	2,560	410	<50	<50	<50	<50	<50	11,000	73	<10	30	<10	<10	<10	<10	<10	30	
21	Harbor porpoise	Iwate Pref.	M	A	Fat, liver	90	<50	<50	<50	150	500	640	<50	<50	<50	<50	<50	<50	<50	1,290	285	166	320	30	<10	<10	<10	<10	516	
22	Harbor porpoise	Hokkaido	M	S	Fat, liver	88	<50	<50	<50	120	720	1,050	180	<50	<50	<50	<50	<50	<50	2,070	323	192	230	30	<10	<10	<10	<10	452	
23	Harbor porpoise	Hokkaido	F	A	Fat, liver	90	<50	<50	<50	<50	<50	170	<50	<50	<50	<50	<50	<50	<50	170	113	75	110	20	<10	<10	<10	<10	205	
24	Finless porpoise	Yamaguchi Pref.	M	A	Fat, liver	78	<50	<50	<50	8,220	17,100	57,000	33,300	4,740	240	<50	<50	<50	<50	120,600	218	17	2,330	10	<10	<10	<10	<10	2,357	
25	Finless porpoise	Yamaguchi Pref.	M	J	Fat, liver	88	<50	<50	80	1,180	1,910	4,250	1,820	<50	<50	<50	<50	<50	<50	9,240	84	21	130	<10	<10	<10	<10	<10	151	
26	Finless porpoise	Chiba Pref.	F	N	Fat, liver	70	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	0	31	<5	10	<10	<10	<10	<10	<10	10	

Age A:Adult AL:In lactation Pr:Pregnant S:Sub-adult J:Juvenile N:Newly born y:Years old (Age)

* Calculated on the assumption that values below the limit of detection are counted as 0.

Results of 1998 Research on Effects of Endocrine Disrupting Chemicals on Wildlife (Whales—2)

(Concentration per wet weight)

No.	Names of species	Specimen collection site	Gender (M: Male, F: Fe)	Age	Specimen	Lipid	4		5	6	7		8				9	10	11	12	13	14	15	16					
							SPEED'98 No.						14	15	16	18		19				23	25	26	43	33	34		
							cis-Chlordane	trans-Chlordane	Oxychlordane	trans-Nonachlor	cis-Nonachlor	o,p'-DDT	p,p'-DDT	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	Dieldrin	Heptachlor	Heptachlor epoxide	Benzo(a)pyrene	Tributyltin	Triphenyltin	Dibutyltin	Monobutyltin				
Unit %						$\mu\text{g/kg-wet}$																							
1	Fin whales	Yamaguch	F	A	Fat	25	<5	<5	<5	<5	<5	47	92	<5	192	7	20	<10	<5	<10	<5	<50	<50	<50	<50				
2	Minke whales	Niigata Pr	F	J	Fat, liver	42	43	<5	79	473	94	345	554	57	1,820	136	940	190	<5	60	<5	<20	20	<100	<200				
3	Mesoplodon stejnegeri	Niigata Pr	M	A	Fat	88	16	8	62	462	41	370	2,660	89	5,090	52	987	50	<5	20	<5	<50	<50	<50	<50				
4	Mesoplodon stejnegeri	Yamagata	M	S	Fat, liver	78	54	15	320	1,260	227	1,030	6,610	243	13,600	257	2,440	240	<5	110	<5	60	60	300	<200				
5	Mesoplodon stejnegeri	Niigata Pr	M	S	Fat, liver	86	29	10	218	967	136	610	2,870	170	6,390	147	1,820	110	<5	50	<5	40	40	200	<200				
6	Mesoplodon stejnegeri	Aomori Pr	M	S	Fat, liver	77	27	10	237	793	139	652	3,500	180	7,840	110	1,150	120	<5	50	<5	30	40	100	<200				
7	Mesoplodon stejnegeri	Ishikawa F	F	A	Fat, liver	81	18	8	71	384	51	355	1,750	71	2,490	30	711	60	<5	20	<5	<20	<20	<100	<200				
8	Mesoplodon stejnegeri	Tottori Pr	F	A	Fat, liver	70	42	13	152	706	134	775	4,170	124	5,770	132	1,380	120	<5	40	<5	40	30	400	<200				
9	Mesoplodon stejnegeri	Hokkaido	F	AL	Fat, liver	81	39	10	90	406	87	528	2,400	92	3,780	83	912	90	<5	30	<5	<20	<20	200	<200				
10	Mesoplodon stejnegeri	Niigata Pr	F	Pr	Fat	78	22	10	89	593	56	251	1,670	68	3,410	53	611	40	<5	20	<5	<50	<50	<50	<500				
11	Mesoplodon stejnegeri	Yamagata	F	S	Fat, liver	64	32	10	116	568	113	478	1,900	82	2,820	104	1,010	90	<5	30	<5	50	40	400	<200				
12	Mesoplodon stejnegeri	Niigata Pr	F	J	Fat, liver	89	51	14	108	537	114	514	1,540	87	2,220	116	887	100	<5	30	<5	90	50	200	<200				
13	Mesoplodon carlhubbsi	Iwate Pref	F	N	Fat, liver	82	33	11	187	650	81	670	1,570	213	3,330	169	714	80	<5	30	<5	<20	<20	<100	<200				
14	Blainville's beaked wha	Aichi Pref	F	AL	Fat, liver	71	17	<5	39	281	40	204	557	25	1,330	34	194	20	<5	<10	<5	330	40	800	300				
15	Blainville's beaked wha	Aichi Pref	F	N	Fat, liver	83	43	12	135	648	99	492	1,340	75	2,830	109	610	70	<5	20	<5	<20	<20	<100	<200				
16	Feral dolphin	Iwate Pref	M	S	Fat, liver	67	132	20	92	920	112	1,020	251	182	6,280	111	246	110	<5	60	<5	30	<20	<100	<200				
17	Feral dolphin	Kanagawa	F	Pr	Fat, liver	62	109	21	30	441	132	119	143	22	618	31	147	40	<5	10	<5	30	20	100	<200				
18	Pacific white-sided dol	Ibaraki Pr	M	N	Fat, liver	20	80	<10	86	579	106	242	165	44	1,140	37	136	70	<5	40	<5	40	<20	200	<200				
19	Pacific white-sided dol	Niigata Pr	F	S	Fat, liver	65	459	45	495	2,900	820	1,850	1,520	236	10,800	348	1,760	430	<5	200	<5	50	<20	200	<200				
20	Melon-headed whale	Shizuoka I	M	A	Fat, liver	-	106	17	64	754	106	591	360	84	4,910	88	221	40	<5	10	<5	110	20	600	<200				
21	Harbor porpoise	Iwate Pref	M	A	Fat, liver	90	156	12	111	801	115	292	480	38	1,310	63	361	180	<5	70	<5	30	<20	<100	<200				
22	Harbor porpoise	Hokkaido	M	S	Fat, liver	88	162	11	136	786	200	368	780	43	1,410	79	530	140	<5	50	<5	150	20	200	200				
23	Harbor porpoise	Hokkaido	F	A	Fat, liver	90	41	<5	17	130	23	48	88	9.0	195	13	71	50	<5	20	<5	40	<20	100	<200				
24	Finless porpoise	Yamaguch	M	A	Fat, liver	78	180	<5	1,190	7,570	1,640	2,270	3,090	351	30,300	392	4,780	1,930	<5	220	<5	130	50	1,100	<200				
25	Finless porpoise	Yamaguch	M	J	Fat, liver	88	89	7	200	1,200	610	34	104	13	984	21	211	230	<5	30	<5	140	<20	400	<200				
26	Finless porpoise	Chiba Pre	F	N	Fat, liver	70	14	<5	6	32	13	12	20	<5	60	<5	20	<10	<5	<10	<5	40	<20	<100	<200				

Age A:Adult AL:In lactation Pr:Pergnant S:Sub-adult J:Juvenile N:Newly born y:Years old (Age)

Results of 1998 Research on Effects of Endocrine Disrupting Chemicals on Wildlife (Seals-1)

(Concentration per wet weight)

No.	Names of species	Specimen collection site	Gender (M: Male, F: Female)	Age (Years of age, Jv: Juvenile)	Specimen	Lipid	1												2	3				
							SPEED'98 No.						2						4	12				
							Polychlorinated biphenyls (PCBs)												Hexachlorobenzene (HCB)	Hexachlorocyclohexane				
							Chlorinated biphenyl	Dichloro biphenyl	Trichloro biphenyl	Tetrachloro biphenyl	Pentachloro biphenyl	Hexachloro biphenyl	Heptachloro biphenyl	Octachloro biphenyl	Nonachloro biphenyl	Decichloro biphenyl	PCB total*	α -HCH		β -HCH	γ -HCH	δ -HCH	HCH total*	
Unit						μ g/kg-wet																		
1	Ringed seal	Hokkaido	M	3	Fat, liver	92	<50	<50	<50	<50	80	350	<50	<50	<50	<50	430	6	31	10	<10	<10	41	
2	Ringed seal	Hokkaido	M	2	Fat, liver	85	<50	<50	<50	<50	<50	250	<50	<50	<50	<50	250	7	44	10	<10	<10	54	
3	Ringed seal	Hokkaido	F	21	Fat, liver	91	<50	<50	<50	<50	<50	250	<50	<50	<50	<50	250	<5	13	20	<10	<10	33	
4	Ringed seal	Hokkaido	F	5	Fat, liver	89	<50	<50	<50	<50	<50	190	<50	<50	<50	<50	190	<5	15	<10	<10	<10	15	
5	Ringed seal	Hokkaido	F	3	Fat, liver	83	<50	<50	<50	<50	100	550	70	<50	<50	<50	720	<5	34	10	<10	<10	44	
6	Ringed seal	Hokkaido	F	3	Fat, liver	88	<50	<50	<50	<50	90	470	80	<50	<50	<50	640	6	39	<10	<10	<10	39	
7	Ringed seal	Hokkaido	F	3	Fat, liver	90	<50	<50	<50	<50	50	250	<50	<50	<50	<50	300	8	38	60	<10	<10	98	
8	Ringed seal	Hokkaido	F	3	Fat, liver	87	<50	<50	<50	<50	<50	120	<50	<50	<50	<50	120	6	32	10	<10	<10	42	
9	Ringed seal	Hokkaido	F	2	Fat	75	<50	<50	<50	<50	80	350	<50	<50	<50	<50	430	7	47	20	<10	<10	67	
10	Ringed seal	Hokkaido	F	2	Fat, liver	72	<50	<50	<50	<50	60	230	<50	<50	<50	<50	290	5	37	20	<10	<10	57	
11	Ringed seal	Hokkaido	F	2	Fat, liver	92	<50	<50	<50	<50	60	300	<50	<50	<50	<50	360	<5	16	<10	<10	<10	16	
12	Ringed seal	Hokkaido	F	Jv	Fat, liver	90	<50	<50	<50	<50	<50	180	<50	<50	<50	<50	180	<5	19	<10	<10	<10	19	
13	Spotted seal	Hokkaido	M	3	Fat, liver	74	<50	<50	<50	<50	<50	210	<50	<50	<50	<50	210	5	28	10	<10	<10	38	
14	Spotted seal	Hokkaido	M	Jv	Fat, liver	89	<50	<50	<50	<50	430	1,100	130	<50	<50	<50	1,660	15	85	300	<10	<10	390	
15	Spotted seal	Hokkaido	M	Jv	Fat, liver	83	<50	<50	<50	<50	250	500	<50	<50	<50	<50	750	17	68	240	<10	<10	310	
16	Spotted seal	Hokkaido	F	Jv	Fat, liver	88	<50	<50	<50	<50	120	240	<50	<50	<50	<50	360	13	91	230	<10	<10	320	
17	Spotted seal	Hokkaido	F	Jv	Fat, liver	84	<50	<50	<50	<50	410	580	<50	<50	<50	<50	990	9	69	260	<10	<10	330	
18	Spotted seal	Hokkaido	F	Jv	Fat, liver	81	<50	<50	<50	<50	270	410	<50	<50	<50	<50	680	17	79	520	<10	<10	600	
19	Spotted seal	Hokkaido	F	Jv	Fat, liver	94	<50	<50	<50	180	2,470	5,490	520	<50	<50	<50	8,660	9	68	560	<10	<10	630	

* Calculated on the assumption that values below the limit of detection are counted as 0.

Results of 1998 Research on Effects of Endocrine Disrupting Chemicals on Wildlife (Seals-2)

(Concentration per wet weight)

No.	Names of species	Specimen collection site	Gender (M: Male, F: Female)	Age (Years of age, Jv: Juvenile)	Specimen	Lipid	4		5	6		7		8				9	10	11	12	13	14	15	16						
							SPEED'98 No.						14		15	16	18		19				23	25	26	43	33	34			
							Chlordane		Oxychlordane	trans-Nonachlor	cis-Nonachlor	o,p'-DDT	p,p'-DDT	o,p'-DDE	p,p'-DDE	o,p'-DDD	p,p'-DDD	Dieldrin	Heptachlor	Heptachlor epoxide	Benzo(a)pyrene	Tributyltin	Triphenyltin	Dibutyltin	Monobutyltin						
							cis-Chlordane	trans-Chlordane																		DDT		DDE and DDD			
Unit						%						μg/kg-wet																			
1	Common seal	Hokkaido	M	3	Fat, liver	92	<5	<5	83	101	<5	<5	103	<5	519	<5	10	<10	<5	20	<5	<20	<20	<100	<200						
2	Common seal	Hokkaido	M	2	Fat, liver	85	<5	<5	79	122	<5	6	80	<5	311	<5	9	<10	<5	20	<5	<20	<20	<100	<200						
3	Common seal	Hokkaido	F	21	Fat, liver	91	<5	<5	45	57	<5	<5	30	<5	150	<5	<5	<10	<5	<10	<5	<20	<20	<100	<200						
4	Common seal	Hokkaido	F	5	Fat, liver	89	<5	<5	46	58	<5	<5	62	<5	220	<5	5	<10	<5	10	<5	<20	<20	<100	<200						
5	Common seal	Hokkaido	F	3	Fat, liver	83	<5	<5	95	110	<5	<5	67	<5	420	<5	8	<10	<5	20	<5	<20	<20	<100	<200						
6	Common seal	Hokkaido	F	3	Fat, liver	88	<5	<5	87	140	<5	<5	70	<5	372	<5	7	<10	<5	20	<5	<20	<20	<100	<200						
7	Common seal	Hokkaido	F	3	Fat, liver	90	<5	<5	72	90	<5	<5	74	<5	287	<5	8	10	<5	20	<5	<20	<20	<100	<200						
8	Common seal	Hokkaido	F	3	Fat, liver	87	<5	<5	56	104	<5	<5	62	<5	210	<5	7	<10	<5	20	<5	<20	<20	<100	<200						
9	Common seal	Hokkaido	F	2	Fat	75	<5	<5	91	192	<5	<5	90	<5	370	<5	9	<10	<5	20	<5	<50	<200	<50	<500						
10	Common seal	Hokkaido	F	2	Fat, liver	72	<5	<5	72	102	<5	<5	83	<5	269	<5	8	<10	<5	20	<5	<20	<20	<100	<200						
11	Common seal	Hokkaido	F	2	Fat, liver	92	<5	<5	67	89	<5	<5	70	<5	328	<5	7	<10	<5	10	<5	<20	<20	<100	<200						
12	Common seal	Hokkaido	F	Jv	Fat, liver	90	<5	<5	40	77	<5	<5	39	<5	159	<5	<5	<10	<5	<10	<5	<20	<20	<100	<200						
13	Spotted seal	Hokkaido	M	3	Fat, liver	74	<5	<5	59	75	<5	<5	45	<5	218	<5	<5	<10	<5	10	<5	<20	<20	<100	<200						
14	Spotted seal	Hokkaido	M	Jv	Fat, liver	89	7	<5	300	434	23	<5	549	<5	1,540	<5	41	70	<5	60	<5	<20	<20	<100	<200						
15	Spotted seal	Hokkaido	M	Jv	Fat, liver	83	<5	<5	130	176	14	<5	245	<5	1,190	<5	35	70	<5	50	<5	<20	<20	<100	<200						
16	Spotted seal	Hokkaido	F	Jv	Fat, liver	88	<5	<5	113	76	<5	<5	99	<5	447	<5	15	90	<5	70	<5	<20	<20	<100	<200						
17	Spotted seal	Hokkaido	F	Jv	Fat, liver	84	<5	<5	105	107	9	<5	79	<5	977	<5	117	40	<5	30	<5	110	<20	<100	<200						
18	Spotted seal	Hokkaido	F	Jv	Fat, liver	81	<5	<5	305	140	14	<5	475	<5	1,630	<5	65	70	<5	60	<5	<20	<20	<100	<200						
19	Spotted seal	Hokkaido	F	Jv	Fat, liver	94	<5	<5	210	161	17	<5	478	<5	2,530	<5	63	70	<5	60	<5	<20	<20	<100	<200						