CHAPTER 2
MONITORING RESULTS ON CHEMICALS OTHER THAN THE 12 POPs

Chapter 2 summarizes the monitoring results on chemicals other than the 12 POPs that were monitored for more than 5 years in the past under the "Investigation of Chemical Substances in the Environment". Their detected frequencies and detection ranges are shown from Fig.2-1 to Fig.2-33, and Table 2-3.

Summary

Table 2-1 shows chemicals surveyed successivly other than the 12 POPs. And Table 2-2 shows summary of the survey and monitoring results of them.

Table 2-1 Surveyed Chemicals other than the 12 POPs

	Name	MF	CAS Registry No.
1	oxychlordane	$C_{10}H_4Cl_8O$	26880-48-8
2	*o,p'*-dichlorodiphenyldichloroethane	$C_{14}H_{10}Cl_4$	53-19-0
3	*p,p'*-dichlorodiphenyldichloroethane	$C_{14}H_{10}Cl_4$	72-54-8
4	*o,p'*-dichlorodiphenyltrichloroethane	$C_{14}H_9Cl_5$	789-02-6
5	*o,p'*-dichlorodiphenyldichloroethylene	$C_{14}H_8Cl_4$	3424-82-6
6	*p,p'*-dichlorodiphenyldichloroethylene	$C_{14}H_8Cl_4$	72-55-9
7	*o*-dichlorobenzene	$C_6H_4Cl_2$	95-50-1
8	*m*-dichlorobenzene	$C_6H_4Cl_2$	541-73-1
9	*p*-dichlorobenzene	$C_6H_4Cl_2$	106-46-7
10	1,2,3-trichlorobenzene	$C_6H_3Cl_3$	87-61-6
11	1,2,4-trichlorobenzene	$C_6H_3Cl_3$	120-82-1
12	1,3,5-trichlorobenzene	$C_6H_3Cl_3$	108-70-3
13	1,2,3,4-tetrachlorobenzene	$C_6H_2Cl_4$	634-66-2
14	1,2,3,5-tetrachlorobenzene	$C_6H_2Cl_4$	634-90-2
15	1,2,4,5-tetrachlorobenzene	$C_6H_2Cl_4$	95-94-3
16	pentachlorobenzene	C_6HCl_5	608-93-5
17	α-hexachlorocyclohexane	$C_6H_6Cl_6$	319-84-6
18	β-hexachlorocyclohexane	$C_6H_6Cl_6$	319-85-7
19	γ-hexachlorocyclohexane	$C_6H_6Cl_6$	58-89-9
20	δ-hexachlorocyclohexane	$C_6H_6Cl_6$	319-86-8
21	polychloronaphthalene	mixture	70776-03-3
22	dioxane	$C_4H_8O_2$	123-91-1
23	*trans*-nonachlor	$C_{10}H_5Cl_9$	39765-80-5
24	*cis*-nonachlor	$C_{10}H_5Cl_9$	5103-73-1
25	2,6-di-*tert*-butyl-4-methyl+phenol	$C_{15}H_{24}O$	128-37-0
26	di-2-ethylhexyl+phthalate	$C_{24}H_{38}O_4$	117-81-7
27	di-n-butyl+phthalate	$C_{16}H_{22}O_4$	84-74-2
28	benzo[a]pyrene	$C_{20}H_{12}$	50-32-8
29	*o*-terphenyl	$C_{18}H_{14}$	84-15-1
30	*m*-terphenyl	$C_{18}H_{14}$	92-06-8
31	*p*-terphenyl	$C_{18}H_{14}$	92-94-4
32	tributyl tin compounds	mixture	
33	triphenyl tin compounds	mixture	
34	2,3,7,8-tetrabromodibenzo-*p*-dioxin	$C_{12}H_4Br_4O_2$	
35	1,2,3,7,8-pentabromodibenzo-*p*-dioxin	$C_{12}H_3Br_5O_2$	
36	1,2,3,4,7,8-hexabromodibenzo-*p*-dioxin + 1,2,3,6,7,8-hexabromodibenzo-*p*-dioxin	$C_{12}H_2Br_6O_2$	
37	1,2,3,7,8,9-hexabromodibenzo-*p*-dioxin	$C_{12}H_2Br_6O_2$	
38	2,3,7,8-tetrabromodibenzofuran	$C_{12}H_4Br_4O$	
39	1,2,3,7,8-pentabromodibenzofuran	$C_{12}H_3Br_5O$	
40	2,3,4,7,8-pentabromodibenzofuran	$C_{12}H_3Br_5O$	
41	1,2,3,4,7,8-hexabromodibenzofuran	$C_{12}H_2Br_6O$	

Table 2-2 Summary of survey and monitoring results on chemicals other than the12 POPs

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													nd														
1	W									nd				nd	nd													
oxychlordane	S									D				nd	nd													
	F									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	nd	D
	SF										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	B										D	D	D	D	D	D	D	D	D	D	D	nd			nd	D	nd	nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
2	W																											
o,p'-dichloro diphenyl	S																											
dichloro ethane	F										D	D	D	nd	D	D	D	D	D	D	D	D	D	D		D		D
	SF										D	nd	nd	nd	nd	nd	nd	nd	D	nd	D	nd	nd	nd		nd		nd
	B										nd	nd	D	nd	nd	nd	nd	nd	nd	nd	nd	nd				nd		nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
3	W													nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
p,p'-dichloro diphenyl	S													D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
dichloro ethane	F										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SF										D	D	D	D	nd	D	D	D	D	D	D	D	D	D	D	D	D	D
	B										D	D	D	D	D	D	D	D	D	D	D	D			D	nd	D	D

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
4	W																											
o,p'-dichloro diphenyl	S																											
trichloro ethane	F										D	D	D	D	D	D	D	D	D	D	D	D	D	D		D		D
	SF										D	nd	nd	nd	nd	nd	D	D	D	D	D	nd	nd	nd		nd		nd
	B										nd	nd	D	nd	nd	nd	nd	D	D	D	nd	nd				nd		nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
5	W																											
o,p'-dichloro diphenyl	S																											
dichloro ethylene	F										D	D	D	nd	D	D	D	D	D	D	D	D	D	D		D		D
	SF										D	D	nd	nd	nd	nd	nd	nd	nd	nd	D	nd	nd	nd		nd		nd
	B										D	D	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd				nd		nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
6	W													nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
p,p'-dichloro diphenyl	S													D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
dichloro ethylene	F										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SF										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	B										D	D	D	D	D	D	D	D	D	D	D	D			D	D	D	D

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A										D																D	
7	W		nd											D	D	D	D	D	D	D	D	D	D	D	D	D		
o-dichloro benzene	S		nd											D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F		nd								D	D	D	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										D	D	D	D		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A										D																D	
8	W		nd											D	D	D	D	D	D	D	D	D	D	D	D	D		
m-dichloro benzene	S		D											D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F		nd								D	D	D	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										D	D	D	D		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A										D																D	
9	W		D											D	D	D	D	D	D	D	D	D	D	D	D	D		
p-dichloro benzene	S		D											D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F		nd								D	D	D	D		nd		D		D		D		D			nd	
	SF										D	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										nd	D	D	D		nd		D		nd		nd					nd	

medium: A(Air), W(Surface Water), S(Bottom Sediment), F(Fish), SF(Shellfish), B(Birds)

symbol: D(measured and detected), nd(The substances were measured but not detected.)

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													D													D	
10	W		nd				D																					
1,2,3-trichlorobenzene	S		nd				D																					
	F		nd				nd				nd	nd	nd	nd		nd		nd		D		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		D		D		D		D			nd	
	B										nd	nd	nd	D		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													D													D	
11	W		nd				D																					
1,2,4-trichlorobenzene	S		D				D																					
	F		D				D				D	D	D	nd		nd		D		D		nd		nd			D	
	SF										D	nd	nd	nd		nd		D		D		D		D			nd	
	B										D	D	D	D		D		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													D													D	
12	W		nd				D																					
1,3,5-trichlorobenzene	S		nd				D																					
	F		nd				D				nd	nd	nd	nd		nd		D		nd		D		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										nd	nd	nd	nd		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																										D	
13	W		nd																									
1,2,3,4-tetrachloro	S		nd																									
benzene	F		nd								nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	D	nd	nd		nd		D		D		D		nd			nd	
	B										nd	nd	nd	nd		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																										D	
14	W		nd																									
1,2,3,5-tetrachloro	S		nd																									
benzene	F		nd								nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										nd	nd	nd	nd		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																										D	
15	W		nd																									
1,2,4,5-tetrachloro	S		nd																									
benzene	F		nd								nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										nd	nd	nd	nd		nd		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																					D				D	
16	W		nd				nd																					
pentachlorobenzene	S		nd				D																					
	F		D				D				nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	SF										nd	nd	nd	nd		nd		nd		nd		nd		nd			nd	
	B										nd	D	nd	nd		D		nd		nd		nd					nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
17	W													nd	nd	nd	nd	nd	nd	nd	D	nd	nd	nd	nd	nd		
α-hexachloro	S													nd	nd	nd	nd	D	D	D	D	D	D	D	D	D	nd	D
cyclohexane	F										D	D	D	D	D	D	D	D	D	D	D	D	D	D		D		D
	SF										D	D	D	D	D	D	D	D	D	nd	D	nd	nd	nd		D		nd
	B										D	D	D	D	D	D	nd	nd	D	nd	nd	D				nd		nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
18	W													nd	D	D	D	D	D	nd	nd	nd	nd	nd	nd	nd		
β-hexachloro	S													D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
cyclohexane	F										D	D	D	D	D	D	D	D	D	D	D	D	D	D		D		D
	SF										D	D	D	D	D	nd	D	nd	D	D	D	nd	nd	nd		nd		nd
	B										D	D	D	D	D	D	D	D	D	D	D	D				D		D

medium: A(Air), W(Surface Water), S(Bottom Sediment), F(Fish), SF(Shellfish), B(Birds)
symbol: D(measured and detected), nd(The substances were measured but not detected.)

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
19	W																											
γ-hexachloro	S																											
cyclohexane	F										D	D	D	D	D	D	nd	nd	nd	D	nd	nd	nd	nd				
	SF										D	D	D	D	D	nd	D	D	D	nd	nd	nd	nd	nd				
	B										D	D	nd	nd	nd	nd	D	D	nd	nd	nd	D						

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
20	W																											
δ-hexachloro	S																											
cyclohexane	F										nd	nd	nd	nd	nd	nd	nd	nd		nd								
	SF										D	nd	nd	nd	nd	nd	nd	nd		nd								
	B										nd	nd	nd	nd	nd	nd	nd	nd		nd								

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
21	W			D		D																						
polychloro	S			D		D																						
naphthalene	F			D		D					nd	nd	nd		nd		nd		nd		nd							
	SF										nd	nd	nd		nd		nd		nd		nd							
	B										nd	nd	nd		nd		nd		nd		nd							

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											D
22	W			nd													D	D	D	D	D	D	D	D	D	D	D	D
dioxane	S			nd													D	D	D	D	D	D	D	D	D	D	D	D
	F																											
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													D														
23	W									nd				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
trans-nonachlor	S									D				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SF										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	B										D	D	D	D	D	D	D	D	D	D	D	nd			D	D	D	D

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A													nd														
24	W									nd				nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
cis-nonachlor	S									D				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SF										D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	nd	D
	B										D	D	D	D	D	D	D	D	D	D	D	nd			nd	nd	nd	nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A												D											D				
25	W													nd	D	D	D	D	D	D	D	D	D	D	D	D		
2,6-di-*tert*-butyl-4-	S													D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
methylphenol	F																							nd				
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A												D											D				
26	W	D	D							D														D				
di-2-ethylhexyl	S	D								D														D				
phthalate	F	D									nd	D	nd		D		nd		nd		nd		nd	D			D	
	SF										nd	nd	nd		nd		D		D		nd		D				nd	
	B										nd	nd	nd		nd		nd		nd		nd						nd	

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A												D											D				
27	W	D	D																					D				
di-n-butylphthalate	S	D																						D				
	F	D									nd	nd	nd		nd		nd		nd		nd		nd	D			nd	
	SF										nd	nd	nd		nd		D		D		D		D				nd	
	B										nd	nd	nd		nd		nd		nd		nd						nd	

medium: A(Air), W(Surface Water), S(Bottom Sediment), F(Fish), SF(Shellfish), B(Birds)

symbol: D(measured and detected), nd(The substances were measured but not detected.)

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																D											
28	W																nd		nd	nd	D	nd	nd	nd	nd	nd		
benzo[a]pyrene	S																D		D	D	D	D	D	D	D	D	D	D
	F																D											
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
29	W			nd	nd									nd	D	nd	nd	D	nd	nd	nd	nd	nd	nd	nd	nd		
o-terphenyl	S			D	D									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F			nd	nd																							
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
30	W			nd	nd									D	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
m-terphenyl	S			D	D									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F			nd	nd																							
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
31	W			nd	nd									nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
p-terphenyl	S			D	D									D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	F			nd	nd																							
	SF																											
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
32	W										nd	nd				D	D	D	D	D	D	D	D	D	D	D	D
tributyl tin compounds	S										D	D				D	D	D	D	D	D	D	D	D	D	D	D	D
	F											D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
	SF												D	D	D	D	D	D	D	D	D	D	D	D	D	D	nd	nd
	B												nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
33	W									nd						D		D	D	D	D	D	nd	nd	nd	D	D	nd
triphenyl tin compounds	S									nd						D		D	D	D	D	D	D	D	D	D	D	D
	F															D	D	D	D	D	D	D	D	D	D	D	D	D
	SF																D	D	D	D	D	D	nd	nd	D	nd	nd	D
	B																D	D	nd	nd	nd	nd		nd	nd	nd	nd	nd

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
34	W																											
2,3,7,8-tetrabromo dibenzo-*p*-dioxin	S																									nd	D	D
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
35	W																											
1,2,3,7,8-pentabromo dibenzo-*p*-dioxin	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
	A																											
36	W																											
(1,2,3,4,7,8 + 1,2,3,6,7,8) - hexabromo dibenzo-*p*-dioxin	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

medium: A(Air), W(Surface Water), S(Bottom Sediment), F(Fish), SF(Shellfish), B(Birds)
symbol: D(measured and detected), nd(The substances were measured but not detected.)

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
37 1,2,3,7,8,9-hexabromo dibenzo-*p*-dioxin	A																											
	W																											
	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
38 2,3,7,8-tetrabromo dibenzofuran	A																											
	W																											
	S																									nd	D	D
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
39 1,2,3,7,8-pentabromo dibenzofuran	A																											
	W																											
	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	2000
40 2,3,4,7,8-pentabromo dibenzofuran	A																											
	W																											
	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

	medium	1974	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98		2000
41 1,2,3,4,7,8-hexabromo dibenzofuran	A																											
	W																											
	S																									nd	nd	nd
	F																									nd	nd	
	SF																										nd	
	B																											

medium: A(Air), W(Surface Water), S(Bottom Sediment), F(Fish), SF(Shellfish), B(Birds)
symbol: D(measured and detected), nd(The substances were measured but not detected.)

Fig. 2-1 Detected frequency and detection range of oxychlordane

(A) Air

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				0/ 73														

Detection Limit: 1.5 ng/m³

(B) Surface Water

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/ 17	0/ 19													

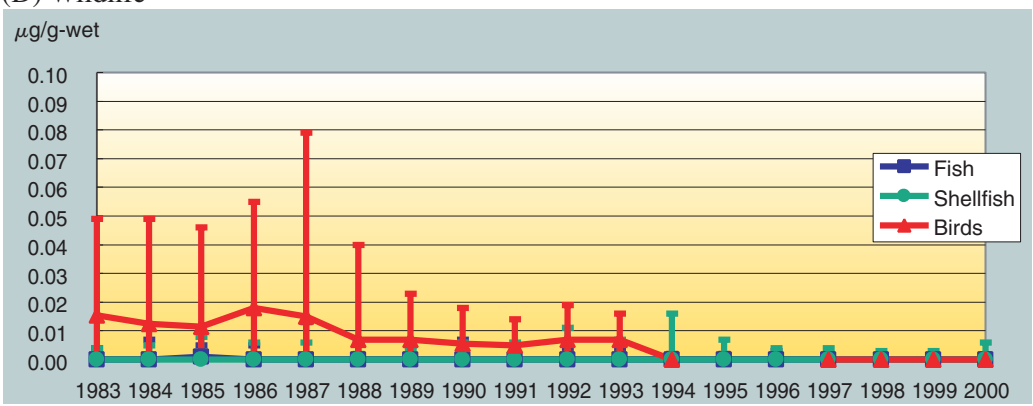
Detection Limit: 0.01 μg/ℓ

(C) Bottom Sediment

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				0/ 17	0/ 19													

Detection Limit: 1 ng/g-dry

(D) Wildlife

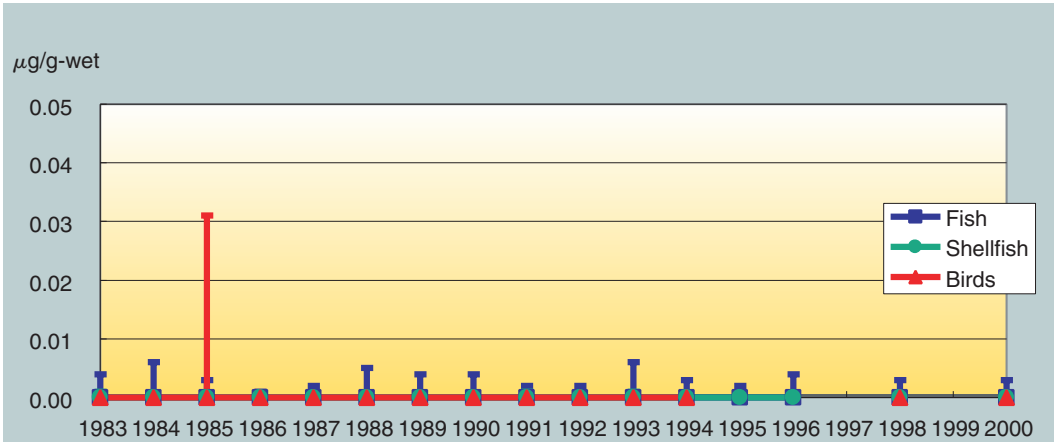


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	17/ 50	26/ 60	31/ 60	20/ 55	28/ 65	24/ 65	28/ 65	16/ 70	21/ 70	14/ 70	21/ 70	12/ 70	3/ 70	11/ 70	1/ 70	5/ 70	0/ 70	5/ 69
SF	5/ 20	5/ 20	5/ 20	4/ 20	5/ 20	1/ 20	4/ 21	5/ 25	10/ 30	5/ 30	5/ 30	5/ 30	5/ 30	5/ 30	5/ 30	5/ 30	5/ 30	5/ 30
B	7/ 10	10/ 10	10/ 10	8/ 10	5/ 10	5/ 10	7/ 10	5/ 10	8/ 10	10/ 10	10/ 10	0/ 5			0/ 10	1/ 10	0/ 10	0/ 10

Detection Limit: 0.001 μg/g-wet

Fig. 2-2 Detected frequency and detection range of *o,p'*-dichlorodiphenyldichloroethane

Wildlife



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	14/ 50	15/ 60	16/ 60	5/ 55	9/ 65	6/ 65	15/ 65	5/ 70	4/ 70	12/ 70	14/ 70	5/ 70	5/ 70	10/ 70		6/ 70		9/ 69
SF	1/ 20	0/ 20	0/ 20	0/ 19	0/ 20	0/ 20	0/ 21	0/ 25	5/ 30	0/ 30	5/ 30	0/ 30	0/ 30	0/ 30		0/ 30		0/ 30
B	0/ 10	0/ 10	2/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 5				0/ 10		0/ 10

Detection Limit: 0.001 μg/g-wet

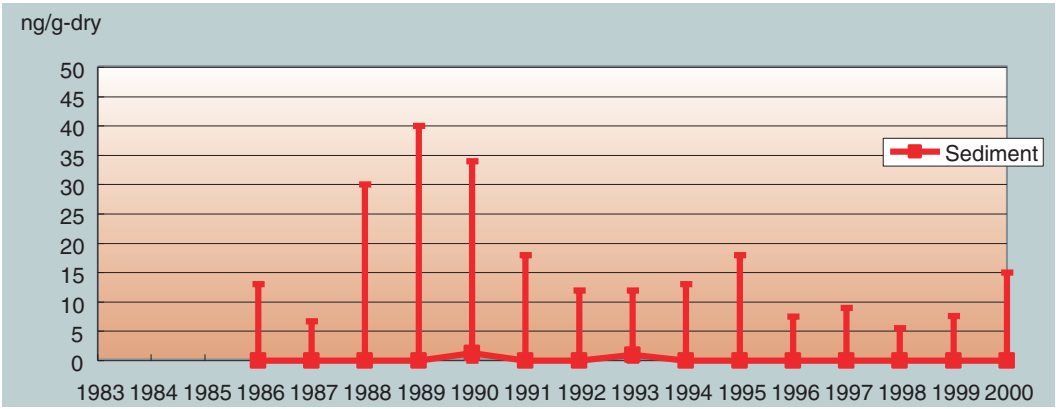
Fig. 2-3 Detected frequency and detection range of *p,p'*-dichlorodiphenyldichloroethane

(A) Surface Water

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/17	0/19	0/22	0/17	0/18	0/18	0/18	0/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/ℓ

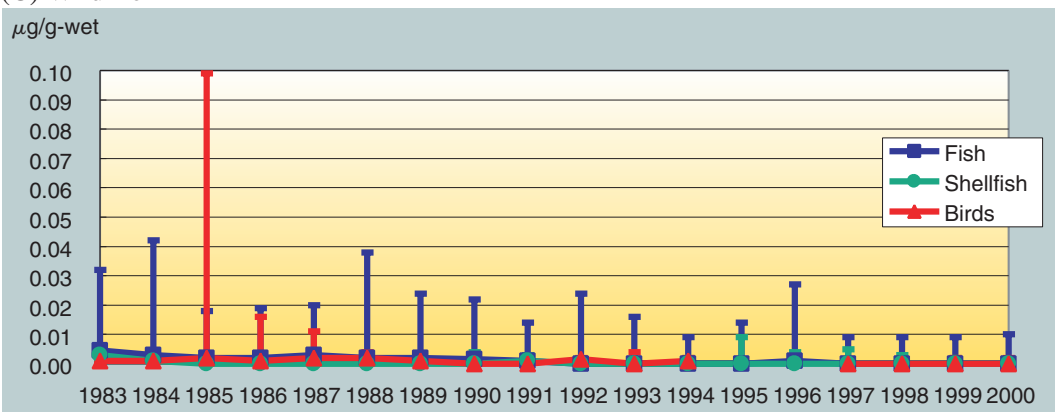
(B) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				5/17	2/19	5/22	4/17	7/18	7/18	8/18	9/19	9/17	10/18	9/18	8/17	8/18	7/18	8/17

Detection Limit: 1 ng/g-dry

(C) Wildlife

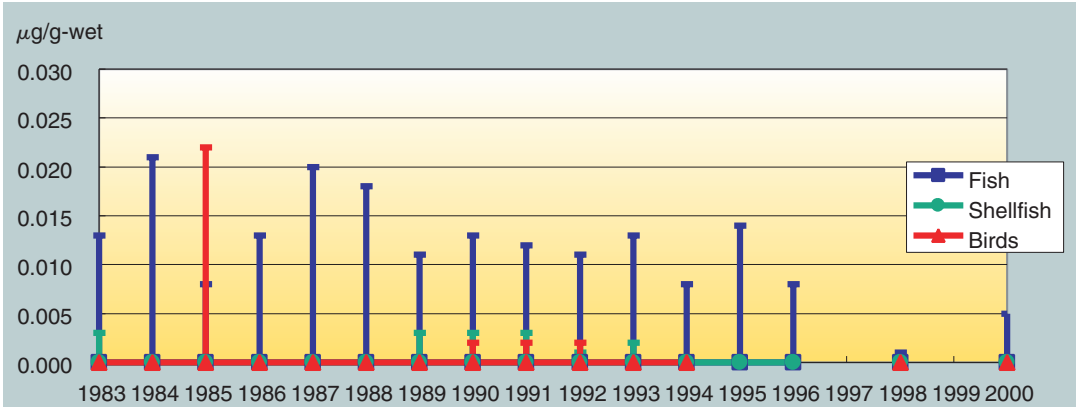


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	40/50	35/60	35/60	37/55	43/65	36/65	41/65	40/70	39/70	32/70	31/70	31/70	31/70	35/70	35/70	29/70	26/70	32/69
SF	13/20	13/20	5/20	10/20	5/20	7/20	6/21	12/25	17/30	6/30	5/30	10/30	5/30	10/30	10/30	10/30	5/30	3/30
B	10/10	5/10	10/10	7/10	6/10	6/10	5/10	5/10	5/10	6/10	5/10	4/5			1/10	0/10	1/10	5/10

Detection Limit: 0.001 μg/g-wet

Fig. 2-4 Detected frequency and detection range of *o,p'*-dichlorodiphenyltrichloroethane

Wildlife

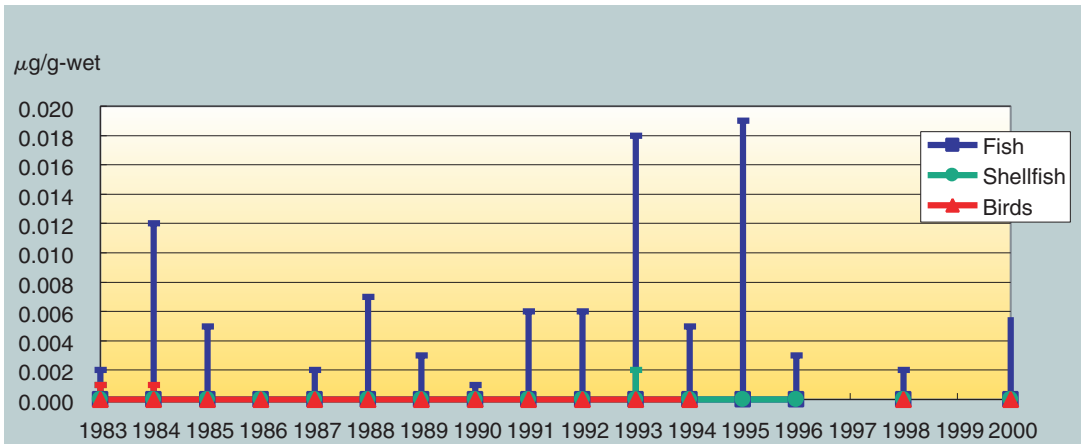


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	14/ 50	9/ 60	12/ 60	11/ 55	10/ 65	9/ 65	6/ 65	5/ 70	5/ 70	5/ 70	5/ 70	4/ 70	15/ 70	9/ 70		2/ 70		7/ 69
SF	5/ 20	0/ 20	0/ 20	0/ 19	0/ 20	0/ 20	5/ 21	5/ 25	5/ 30	5/ 30	4/ 30	0/ 30	0/ 30	0/ 30		0/ 30		0/ 30
B	0/ 10	0/ 10	2/ 10	0/ 10	0/ 10	0/ 10	0/ 10	4/ 10	5/ 10	1/ 10	0/ 10	0/ 5				0/ 10		0/ 10

Detection Limit: 0.001 μg/g-wet

Fig. 2-5 Detected frequency and detection range of *o,p'*-dichlorodiphenyldichloroethylene

Wildlife



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	10/ 50	10/ 60	10/ 60	0/ 55	2/ 65	5/ 65	9/ 65	5/ 70	5/ 70	10/ 70	15/ 70	5/ 70	10/ 70	6/ 70		8/ 70		5/ 69
SF	1/ 20	0/ 20	0/ 20	0/ 20	0/ 20	0/ 20	0/ 21	0/ 25	0/ 30	0/ 30	5/ 30	0/ 30	0/ 30	0/ 30		0/ 30		0/ 30
B	5/ 10	5/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 5				0/ 10		0/ 10

Detection Limit: 0.001 - 0.02 μg/g-wet

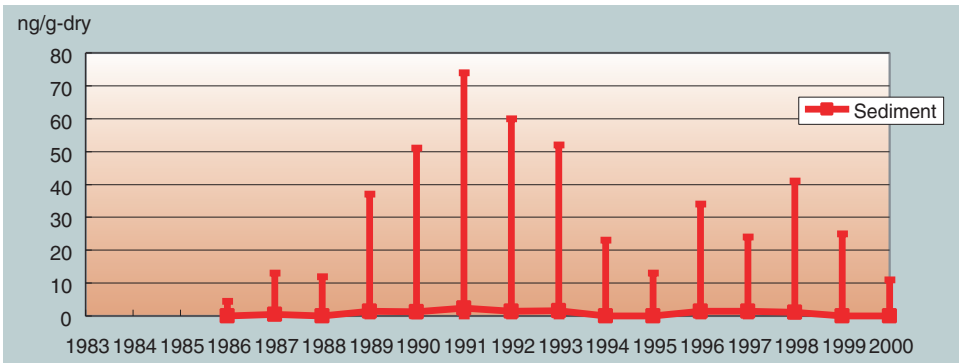
Fig. 2-6 Detected frequency and detection range of *p,p'*-dichlorodiphenyldichloroethylene

(A) Surface Water

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/17	0/19	0/22	0/17	0/18	0/18	0/18	0/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/g-wet

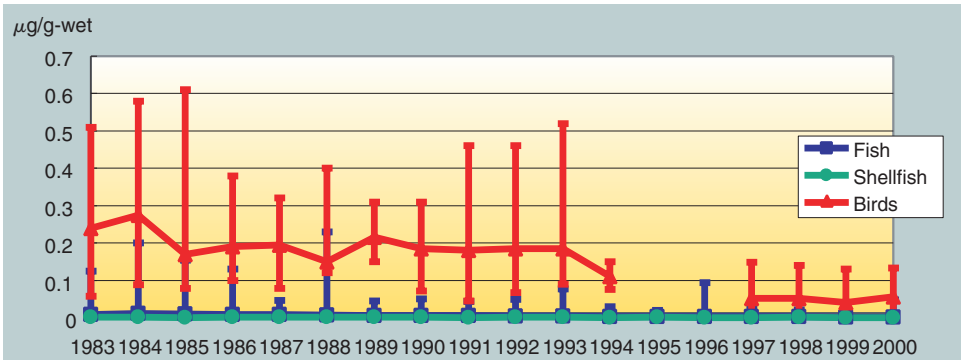
(B) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				6/17	8/19	9/22	10/17	8/18	10/18	10/18	13/19	10/17	8/18	10/18	11/17	11/18	9/18	10/17

Detection Limit: 1 ng/g-dry

(C) Wildlife

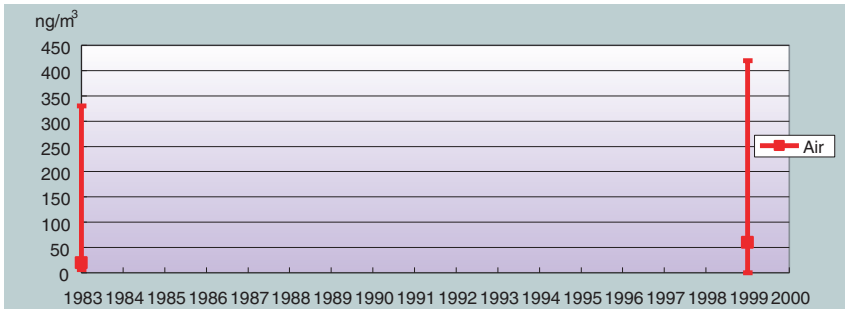


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	45/50	50/60	51/60	51/55	55/65	55/65	52/65	64/70	61/70	58/70	59/70	60/70	63/70	59/70	50/70	59/70	46/70	50/69
SF	11/20	15/20	10/20	15/20	15/20	15/20	11/21	15/25	14/30	19/30	18/30	13/30	15/30	10/30	15/30	20/30	15/30	14/30
B	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	5/5			10/10	10/10	10/10	10/10

Detection Limit: 0.001 μg/g-wet

Fig. 2-7 Detected frequency and detection range of *o*-dichlorobenzene

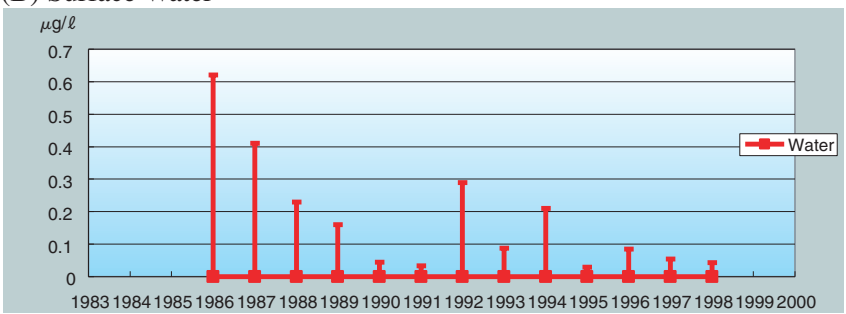
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A	93/ 97																20/ 30	

Detection Limit: 7 - 29 ng/m^3

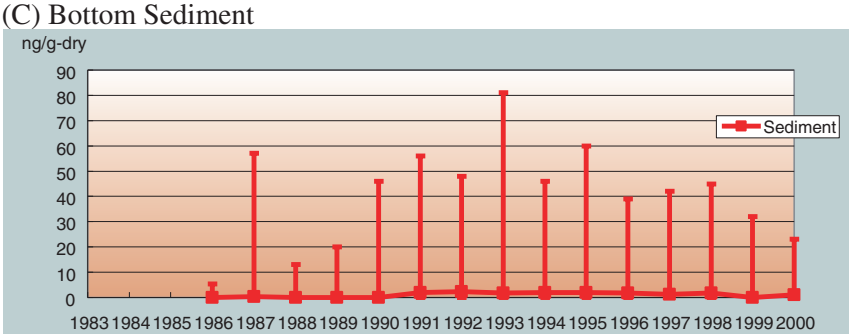
(B) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				3/ 17	3/ 19	4/ 22	6/ 17	4/ 18	4/ 18	7/ 18	5/ 19	3/ 17	4/ 18	4/ 18	3/ 18	1/ 18		

Detection Limit: 0.01 μg/ℓ

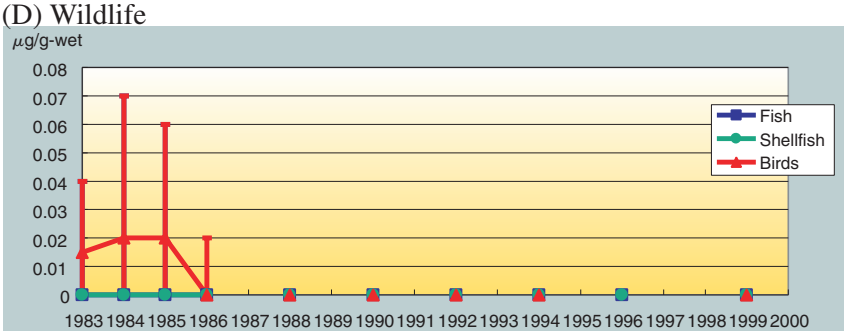
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				6/ 17	9/ 19	7/ 22	12/ 17	7/ 18	13/ 18	13/ 18	16/ 19	14/ 17	15/ 18	12/ 18	11/ 17	11/ 18	14/ 18	9/ 17

Detection Limit: 1 ng/g-dry

(D) Wildlife

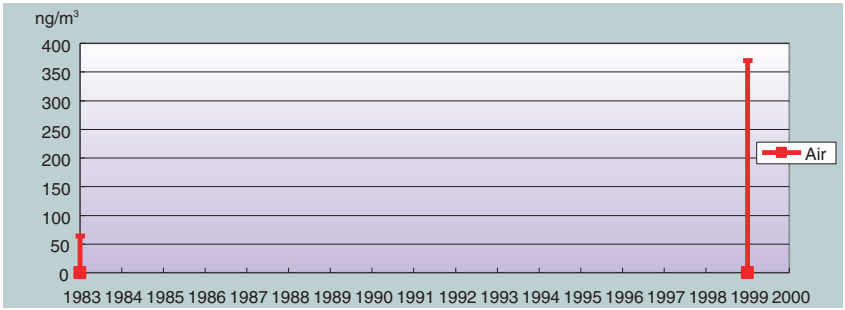


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	5/ 50	5/ 60	5/ 60	0/ 55		0/ 65		0/ 70		0/ 70		0/ 70		0/ 70			0/ 70	
SF	0/ 20	0/ 20	0/ 20	0/ 20		0/ 20		0/ 25		0/ 30		0/ 30		0/ 30			0/ 30	
B	8/ 10	6/ 10	5/ 10	3/ 10		0/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.01 μg/g-wet

Fig. 2-8 Detected frequency and detection range of *m*-dichlorobenzene

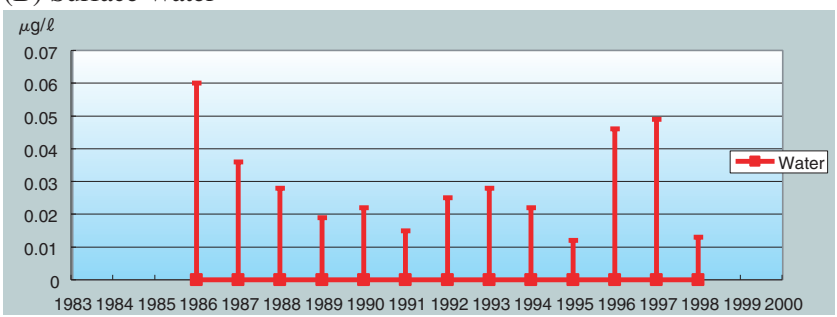
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A	24/ 95																9/ 33	

Detection Limit: 7 - 21 ng/m³

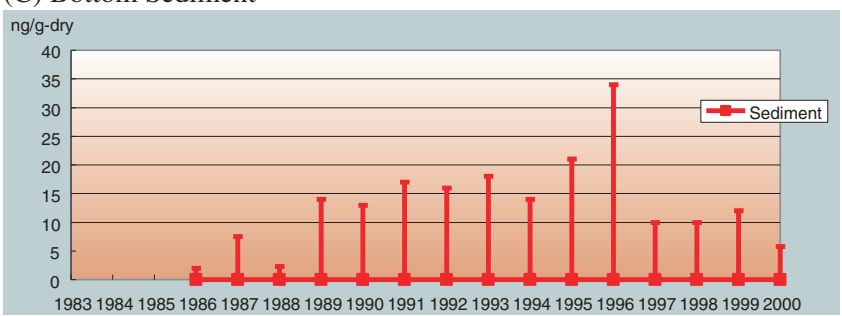
(B) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				1/ 17	1/ 19	4/ 22	3/ 17	4/ 18	2/ 18	3/ 18	2/ 19	2/ 17	3/ 18	5/ 18	2/ 18	1/ 18		

Detection Limit: 0.01 μg/ℓ

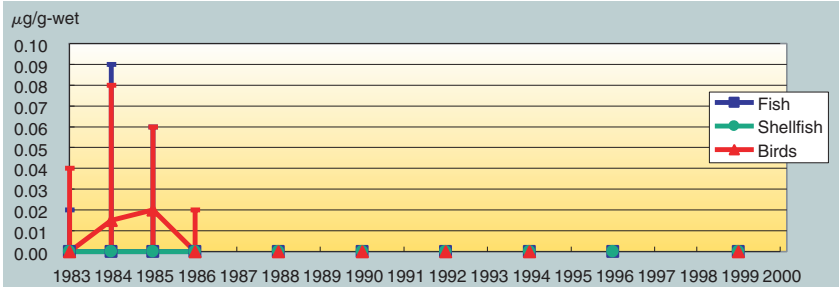
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				2/ 17	6/ 19	4/ 22	4/ 17	4/ 18	8/ 18	11/ 18	13/ 19	10/ 17	12/ 18	9/ 18	8/ 17	7/ 18	5/ 18	6/ 17

Detection Limit: 1 ng/g-dry

(D) Wildlife

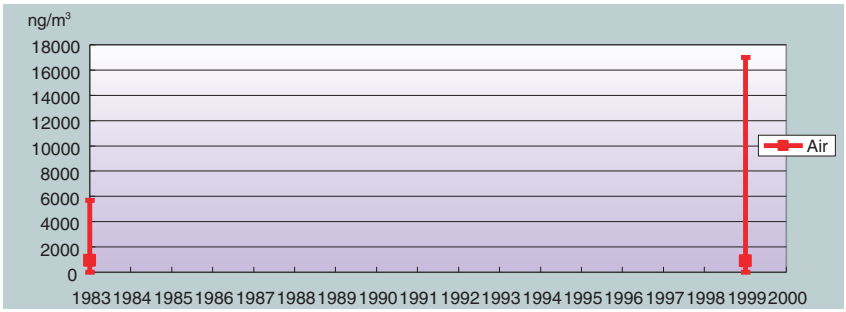


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	5/ 50	5/ 60	5/ 60	0/ 55		0/ 65		0/ 70		0/ 70		0/ 70		0/ 70			0/ 70	
SF	0/ 20	0/ 20	0/ 20	0/ 20		0/ 20		0/ 25		0/ 30		0/ 30		0/ 30			0/ 30	
B	5/ 10	5/ 10	5/ 10	2/ 10		0/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.01 μg/g-wet

Fig. 2-9 Detected frequency and detection range of *p*-dichlorobenzene

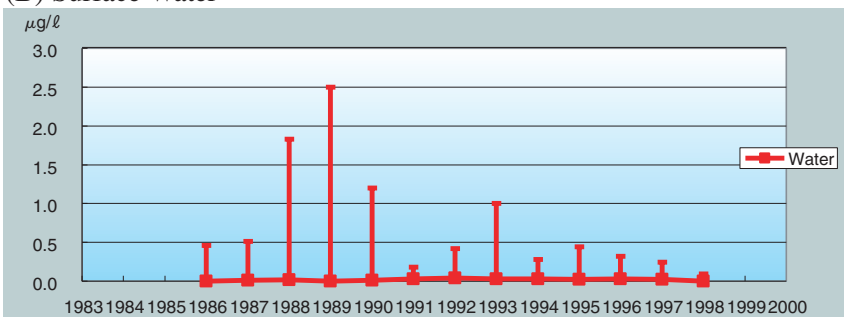
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A	95/ 95																36/ 43	

Detection Limit: 7 - 130 ng/m³

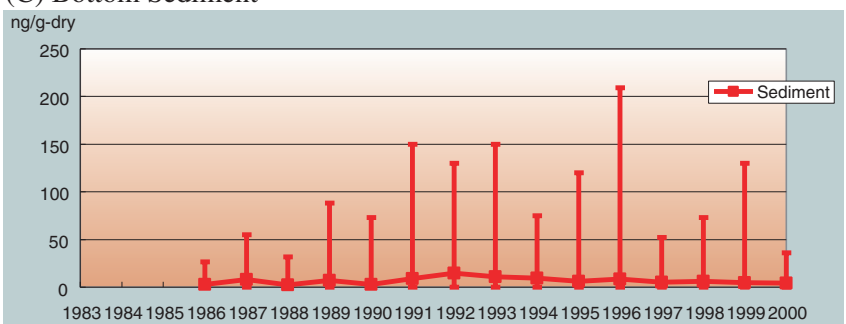
(B) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				7/ 17	11/ 19	13/ 22	6/ 16	9/ 18	11/ 18	12/ 18	13/ 19	9/ 17	8/ 18	11/ 18	11/ 18	8/ 18		

Detection Limit: 0.01 μg/ℓ

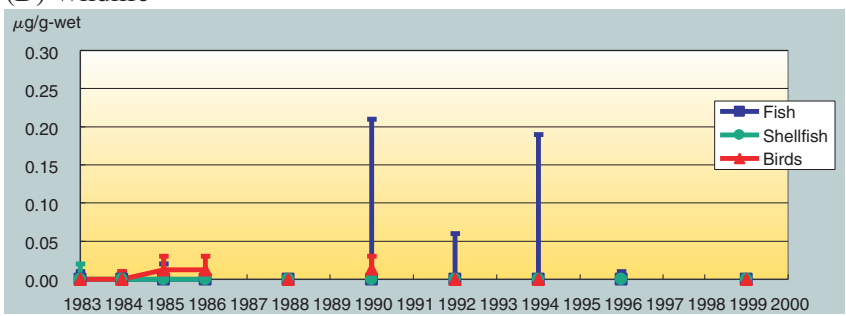
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				11/ 17	13/ 19	16/ 22	13/ 16	9/ 18	16/ 18	16/ 18	18/ 19	16/ 17	17/ 18	16/ 18	16/ 17	16/ 18	15/ 18	15/ 17

Detection Limit: 1 ng/g-dry

(D) Wildlife

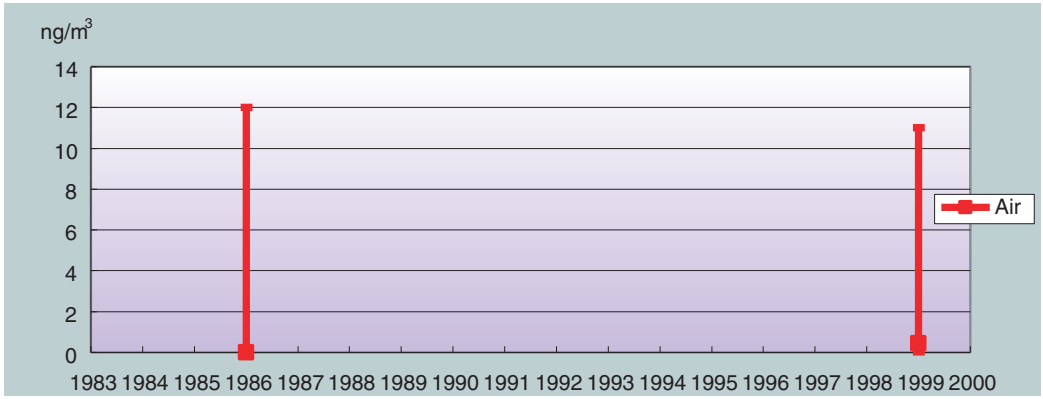


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	5/ 50	1/ 60	2/ 60	0/ 55		0/ 65		10/ 70		6/ 70		5/ 70		2/ 70			0/ 70	
SF	4/ 20	0/ 20	0/ 20	0/ 20		0/ 20		0/ 25		0/ 30		0/ 30		0/ 30			0/ 30	
B	0/ 10	2/ 10	5/ 10	5/ 10		0/ 10		5/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.01 μg/g-wet

Fig. 2-10 Detected frequency and detection range of 1,2,3-trichlorobenzene

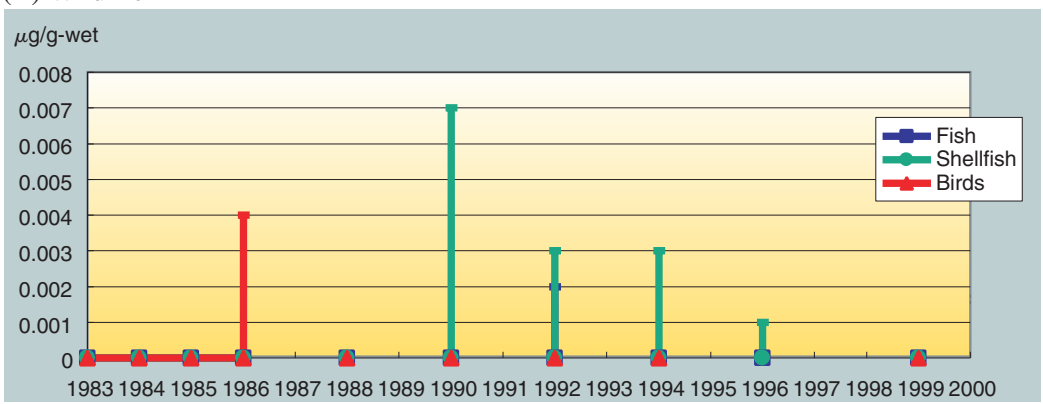
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				22/ 73													38/ 38	

Detection Limit: 0.015 - 1 ng/m³

(B) Wildlife

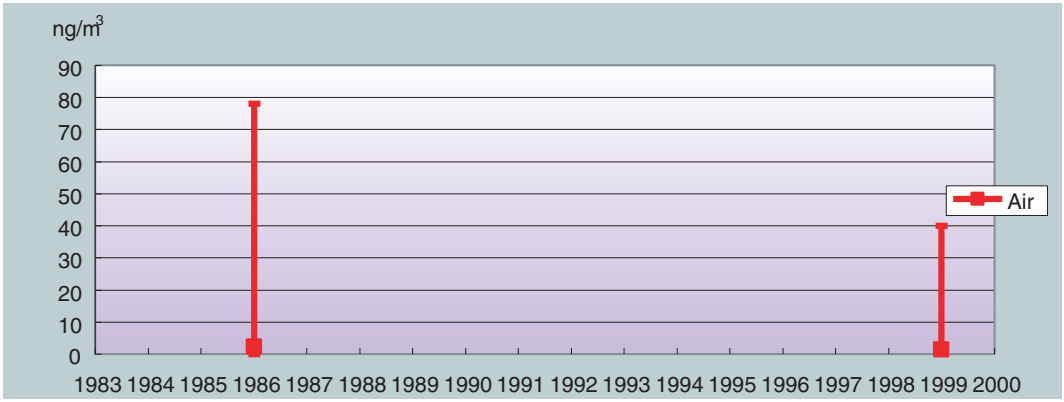


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60	0/ 55		0/ 65		0/ 70		1/ 70		0/ 70		0/ 70			0/ 70	
SF	0/ 20	0/ 20	0/ 20	0/ 20		0/ 20		5/ 25		5/ 30		5/ 30		5/ 30			0/ 30	
B	0/ 10	0/ 10	0/ 10	1/ 10		0/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-11 Detected frequency and detection range of 1,2,4-trichlorobenzene

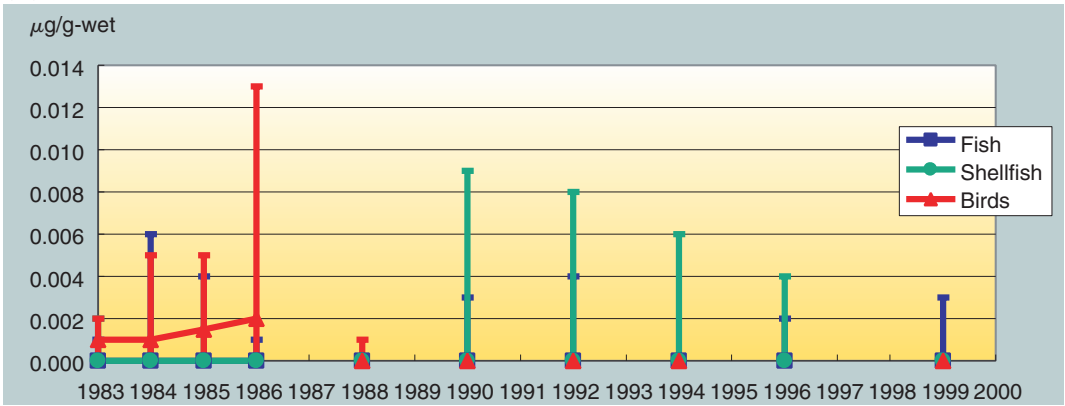
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				63/ 73													39/ 39	

Detection Limit: 0.009 - 1 ng/m^3

(B) Wildlife

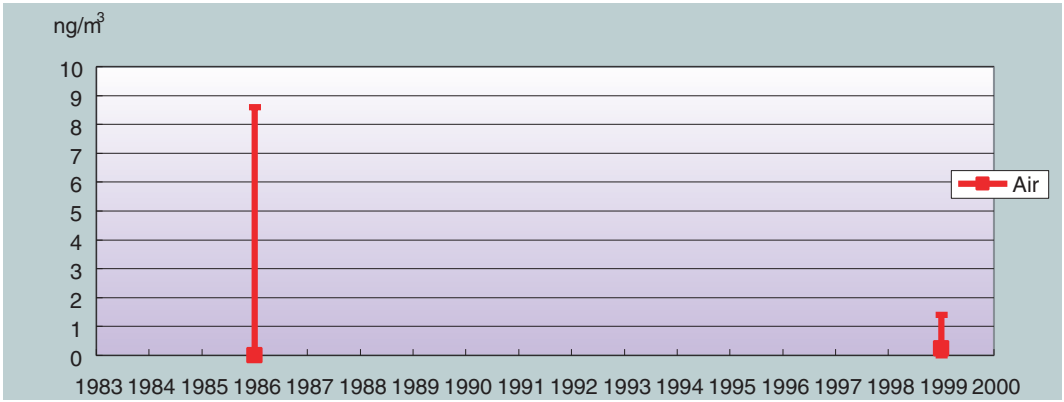


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	5/ 50	5/ 60	5/ 60	7/ 55		0/ 65		10/ 70		6/ 70		0/ 70		5/ 70			5/ 70	
SF	3/ 20	0/ 20	0/ 20	0/ 20		0/ 20		5/ 25		5/ 30		5/ 30		5/ 30			0/ 30	
B	6/ 10	5/ 10	5/ 10	6/ 10		1/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-12 Detected frequency and detection range of 1,3,5-trichlorobenzene

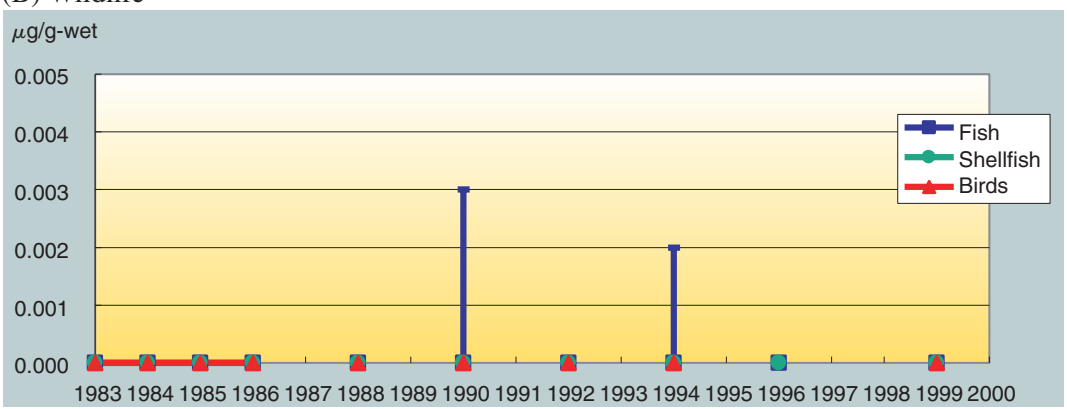
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				7/ 73													38/ 39	

Detection Limit: 0.011 - 1 ng/m³

(B) Wildlife

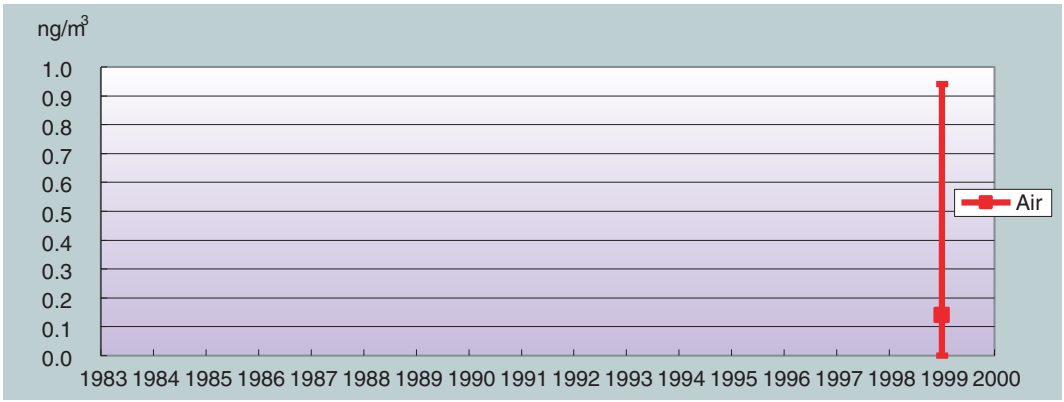


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60	0/ 55		0/ 65		4/ 70		0/ 70		1/ 70		0/ 70			0/ 70	
SF	0/ 20	0/ 20	0/ 20	0/ 20		0/ 20		0/ 25		0/ 30		0/ 30		0/ 30			0/ 30	
B	0/ 10	0/ 10	0/ 10	0/ 10		0/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-13 Detected frequency and detection range of 1,2,3,4-tetrachlorobenzene

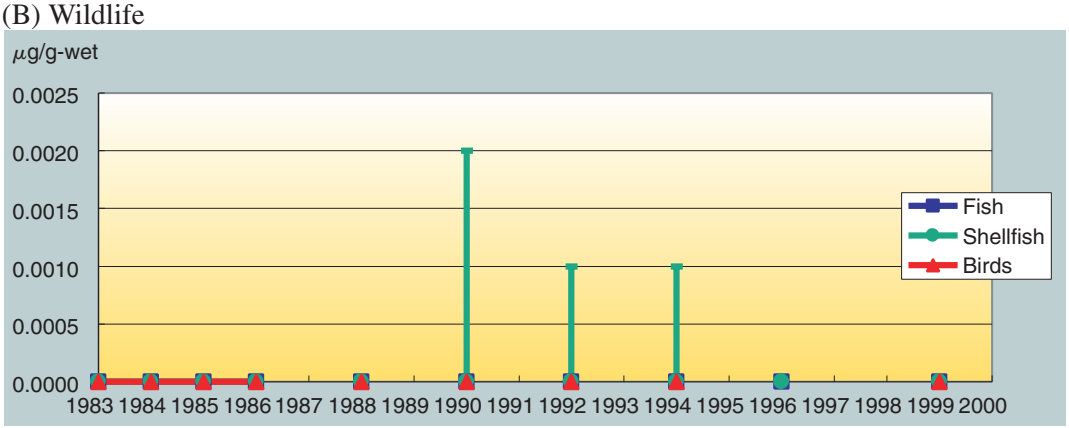
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A																	36/37	

Detection Limit: 0.015 ng/m³

(B) Wildlife

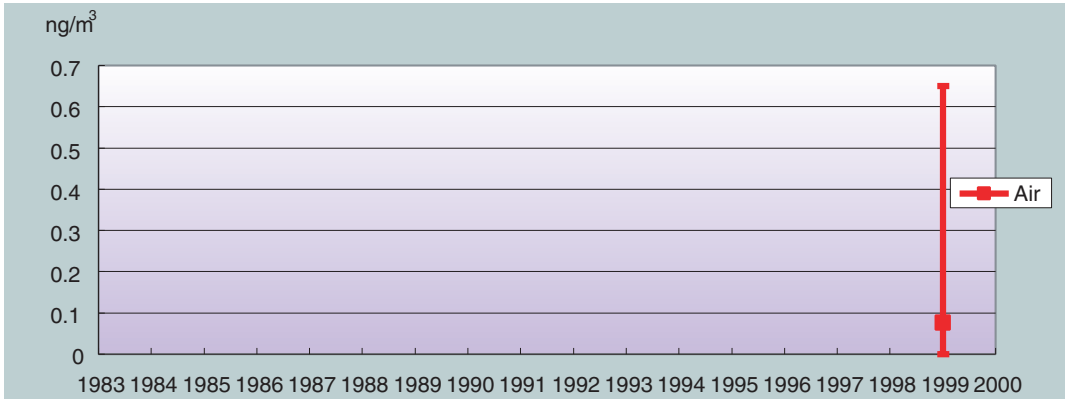


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/50	0/60	0/60	0/55		0/65		0/70		0/70		0/70		0/70			0/70	
SF	0/20	0/20	0/20	0/20		0/20		5/25		1/30		5/30		0/30			0/30	
B	0/10	0/10	0/10	0/10		0/10		0/10		0/10		0/5					0/10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-14 Detected frequency and detection range of 1,2,3,5-tetrachlorobenzene

(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A																	38/39	

Detection Limit: 0.011 ng/m³

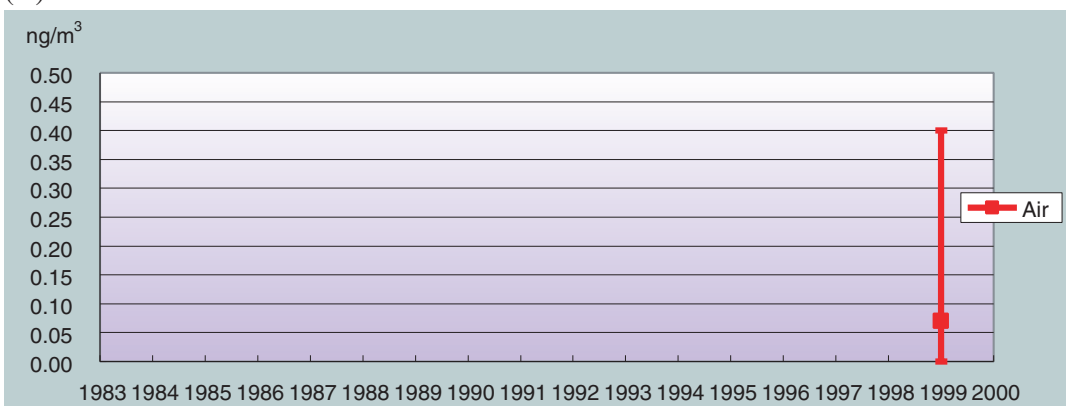
(B) Wildlife

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/50	0/60	0/60	0/55		0/65		0/70		0/70		0/70		0/70			0/70	
SF	0/20	0/20	0/20	0/20		0/20		0/25		0/30		0/30		0/30			0/30	
B	0/10	0/10	0/10	0/10		0/10		0/10		0/10		0/5					0/10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-15 Detected frequency and detection range of 1,2,4,5-tetrachlorobenzene

(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A																	34/35	

Detection Limit: 0.018 ng/m³

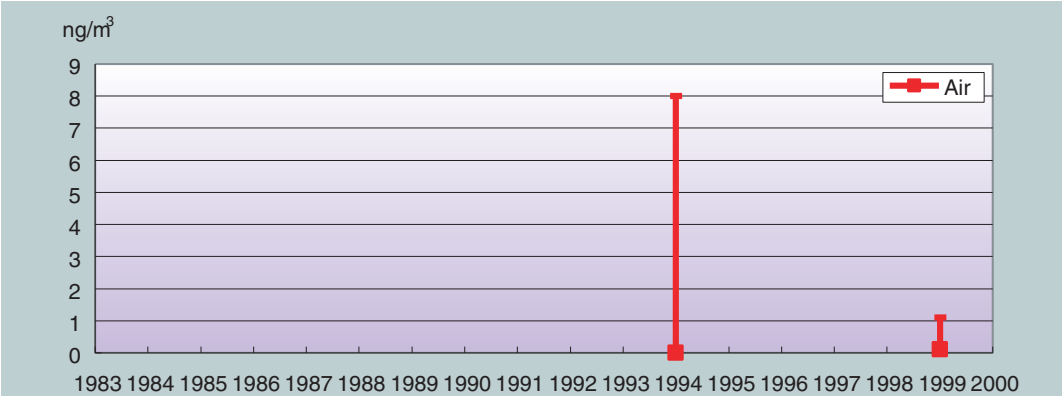
(B) Wildlife

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/50	0/60	0/60	0/55		0/65		0/70		0/70		0/70		0/70			0/70	
SF	0/20	0/20	0/20	0/20		0/20		0/25		0/30		0/30		0/30			0/30	
B	0/10	0/10	0/10	0/10		0/10		0/10		0/10		0/5					0/10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-16 Detected frequency and detection range of pentachlorobenzene

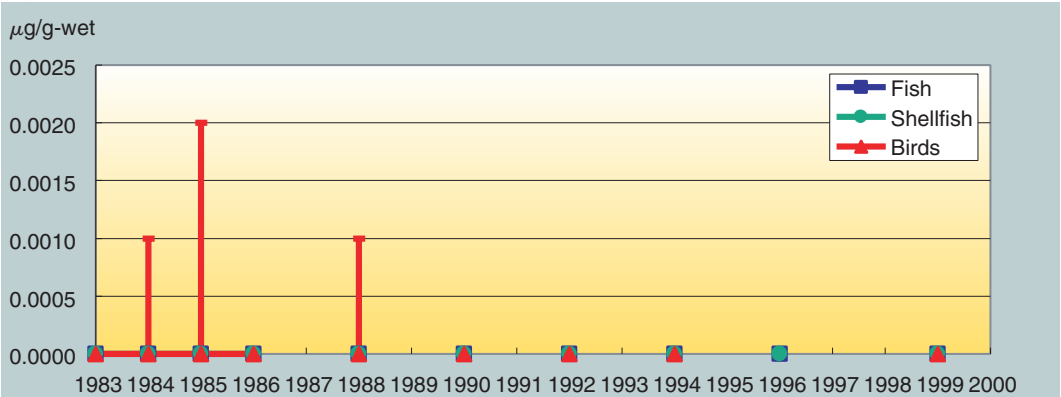
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A												9/ 24					39/ 39	

Detection Limit: 0.011 - 1 ng/m³

(B) Wildlife

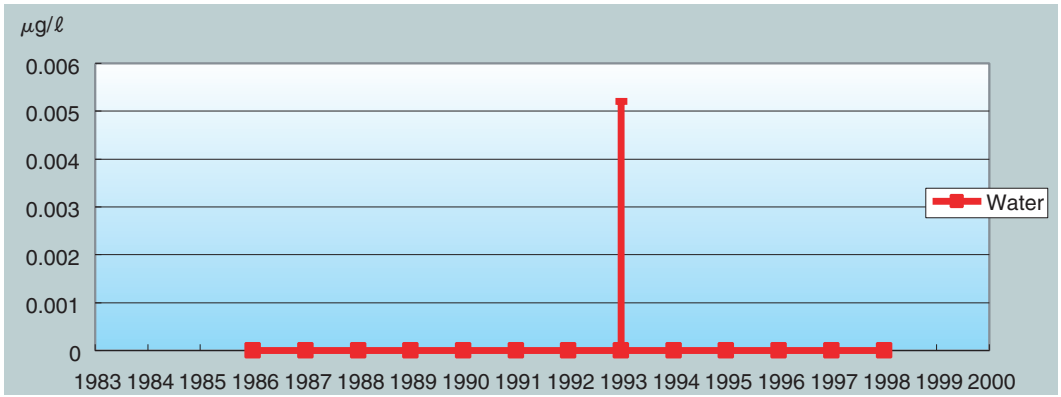


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60	0/ 55		0/ 65		0/ 70		0/ 70		0/ 70		0/ 70			0/ 70	
SF	0/ 20	0/ 20	0/ 20	0/ 20		0/ 20		0/ 25		0/ 30		0/ 30		0/ 30			0/ 30	
B	0/ 10	4/ 10	2/ 10	0/ 10		1/ 10		0/ 10		0/ 10		0/ 5					0/ 10	

Detection Limit: 0.001 μg/g-wet

Fig. 2-17 Detected frequency and detection range of α-hexachlorocyclohexane

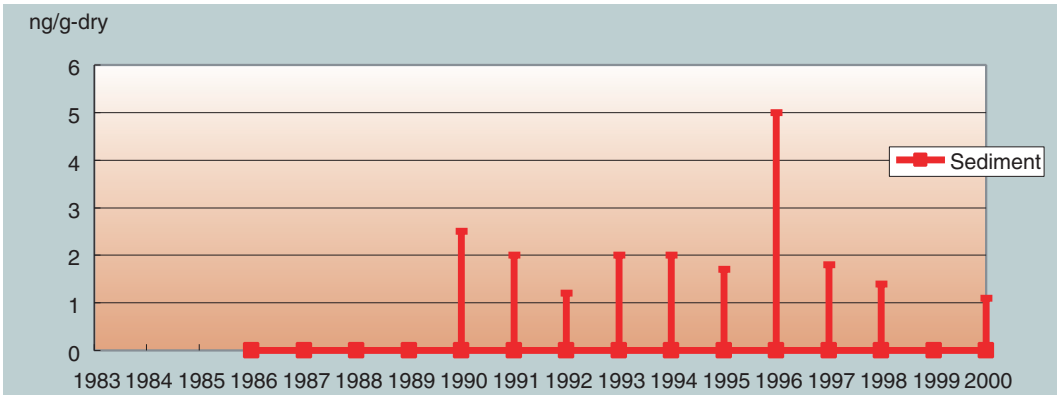
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/17	0/19	0/22	0/17	0/18	0/18	0/18	1/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/ℓ

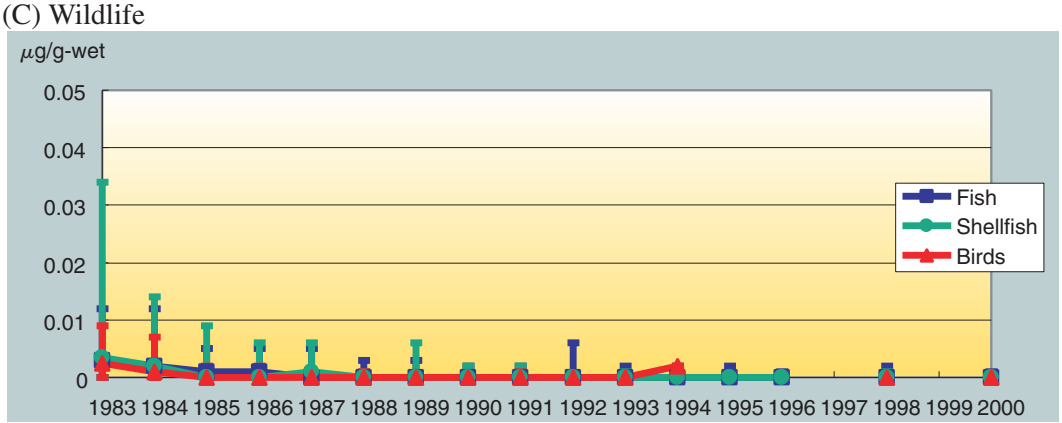
(B) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				0/17	0/19	0/22	0/17	1/18	2/18	1/18	2/19	2/17	1/18	2/18	1/17	2/18	0/18	1/17

Detection Limit: 1 ng/g-dry

(C) Wildlife

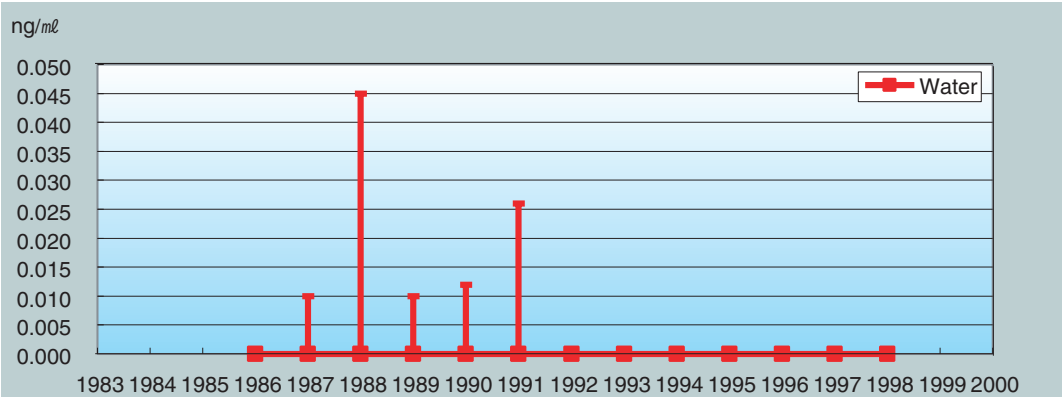


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	39/50	42/60	40/60	33/55	32/65	22/65	14/65	18/70	14/70	16/70	10/70	6/70	8/70	4/70		8/70		1/69
SF	15/20	20/20	7/20	10/20	11/20	5/20	6/21	10/25	6/30	0/30	1/30	0/30	0/30	0/30		3/30		0/30
B	5/10	5/10	5/10	4/10	2/10	3/10	0/10	0/9	2/10	0/10	0/10	3/5				0/10		0/10

Detection Limit: 0.001 μg/g-wet

Fig. 2-18 Detected frequency and detection range of β-hexachlorocyclohexane

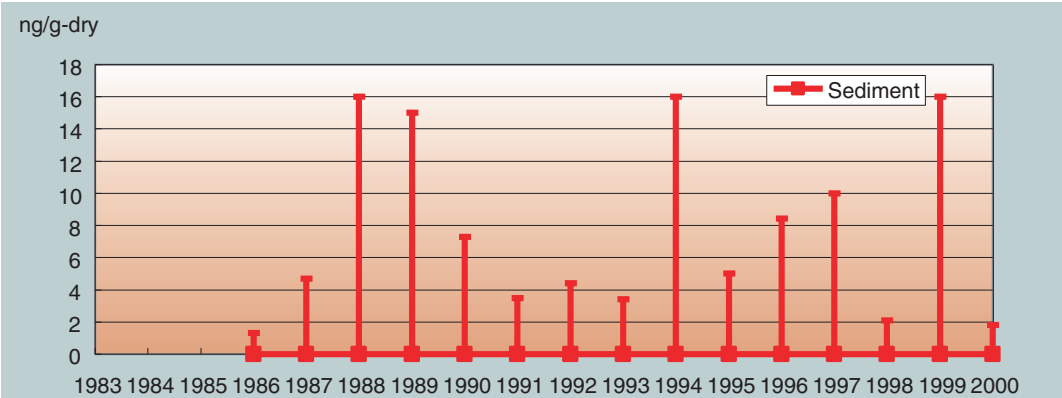
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/17	1/19	2/22	2/17	2/18	1/18	0/18	0/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/ℓ

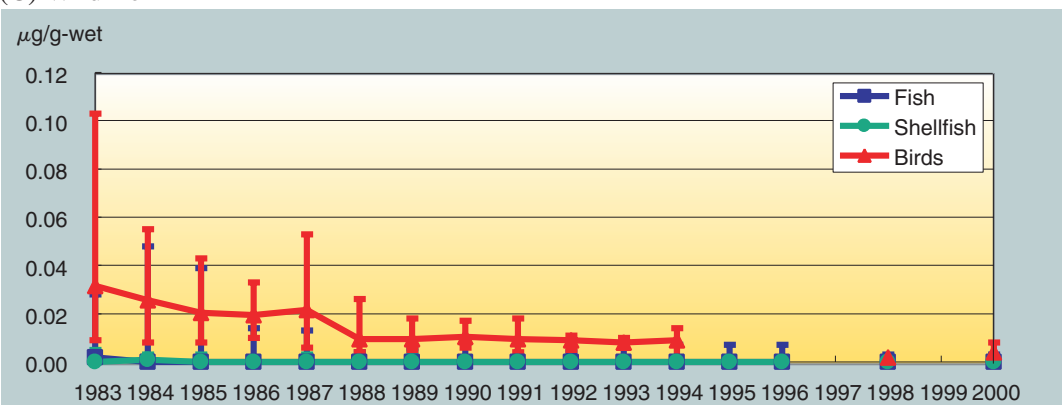
(B) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				2/17	1/19	2/22	2/17	4/18	2/18	2/18	1/19	1/17	3/18	5/18	3/17	1/18	1/18	2/17

Detection Limit: 1 ng/g-dry

(C) Wildlife

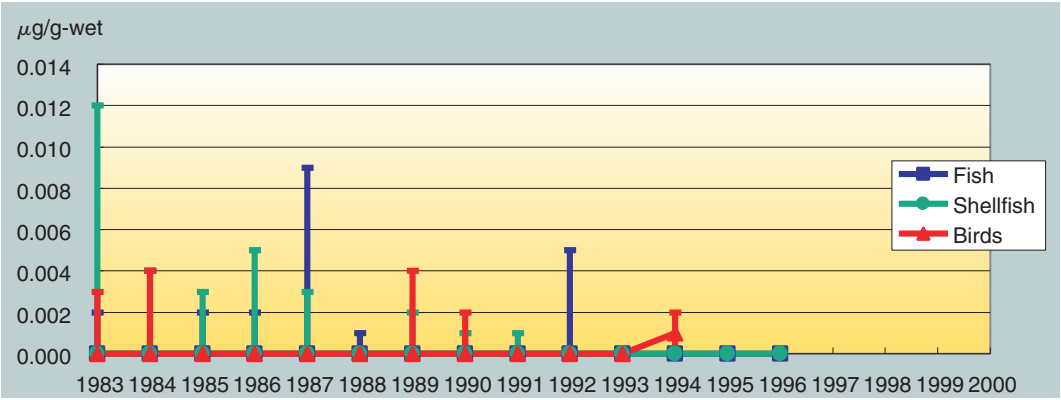


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	33/50	29/60	25/60	20/55	19/65	15/65	17/65	20/70	13/70	25/70	11/70	14/70	10/70	12/70		10/70		7/69
SF	10/20	10/20	5/20	4/20	5/20	0/20	4/21	0/25	4/30	2/30	2/30	0/30	0/30	0/30		0/30		0/30
B	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	10/10	5/5				10/10		10/10

Detection Limit: 0.001 μg/g-wet

Fig. 2-19 Detected frequency and detection range of γ-hexachlorocyclohexane

Wildlife

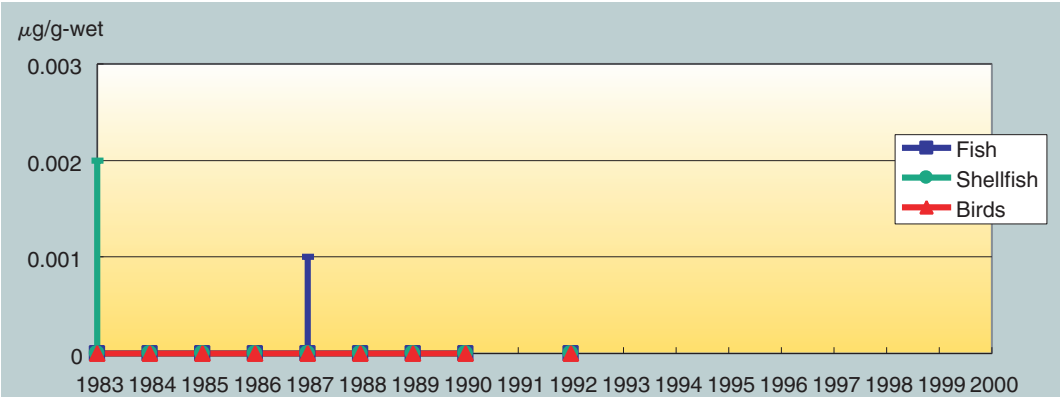


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	18/ 50	21/ 60	8/ 60	5/ 55	6/ 65	1/ 65	0/ 65	0/ 70	0/ 70	3/ 70	0/ 70	0/ 70	0/ 70	0/ 70				
SF	9/ 20	8/ 20	5/ 20	5/ 20	6/ 20	0/ 20	4/ 21	1/ 25	1/ 30	0/ 30	0/ 30	0/ 30	0/ 30	0/ 30				
B	4/ 10	5/ 10	0/ 10	0/ 10	0/ 10	0/ 10	4/ 10	2/ 10	0/ 10	0/ 10	0/ 10	4/ 5						

Detection Limit: 0.001 μg/g-wet

Fig. 2-20 Detected frequency and detection range of δ-hexachlorocyclohexane

Wildlife



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60	0/ 55	1/ 65	0/ 65	0/ 65	0/ 70		0/ 70								
SF	1/ 20	0/ 20	0/ 20	0/ 20	0/ 20	0/ 20	0/ 21	0/ 25		0/ 30								
B	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10		0/ 10								

Detection Limit: 0.001 μg/g-wet

Fig. 2-21 Detected frequency and detection range of polychloronaphthalene

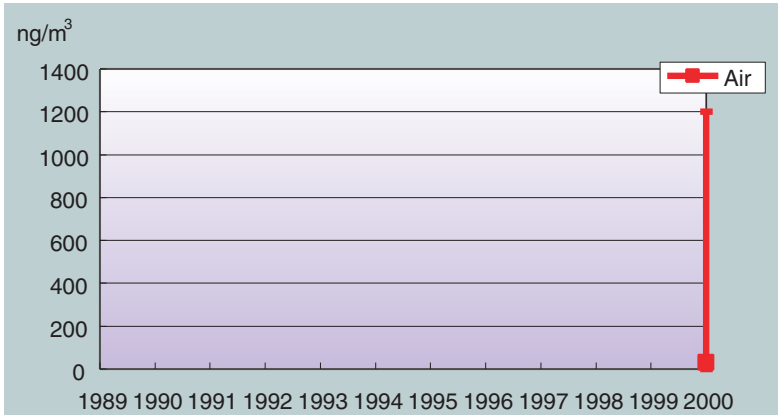
Wildlife

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60		0/ 65		0/ 65		0/ 70		0/ 70							
SF	0/ 20	0/ 20	0/ 20		0/ 20		0/ 21		0/ 30		0/ 30							
B	0/ 10	0/ 10	0/ 10		0/ 10		0/ 10		0/ 10		0/ 10							

Detection Limit: 0.02 μg/g-wet

Fig. 2-22 Detected frequency and detection range of dioxane

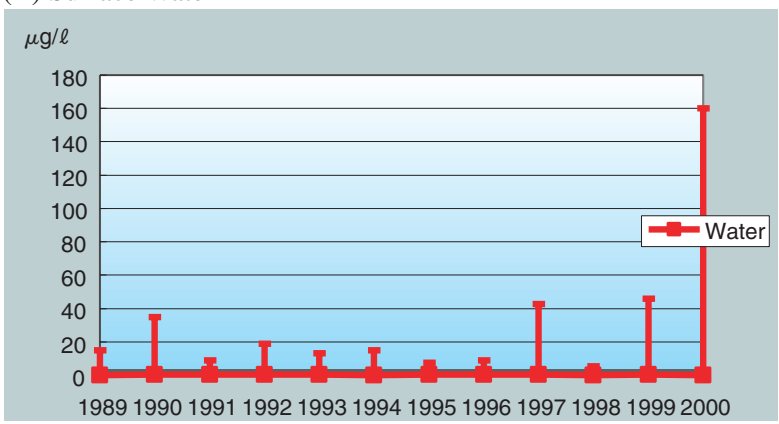
(A) Air



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A												22/ 34

Detection Limit: 6.8 ng/m^3

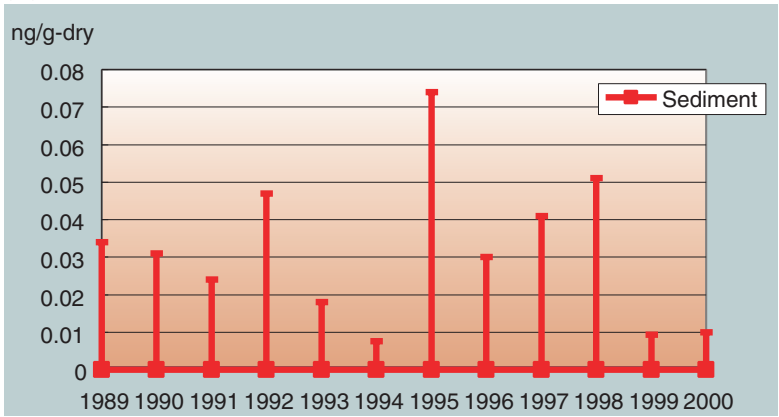
(B) Surface Water



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	40/ 78	59/ 96	66/ 96	64/ 99	67/ 102	60/ 96	64/ 105	68/ 105	70/ 102	63/ 103	71/ 105	60/ 98

Detection Limit: 0.02 - 0.1 μg/ℓ

(C) Bottom Sediment

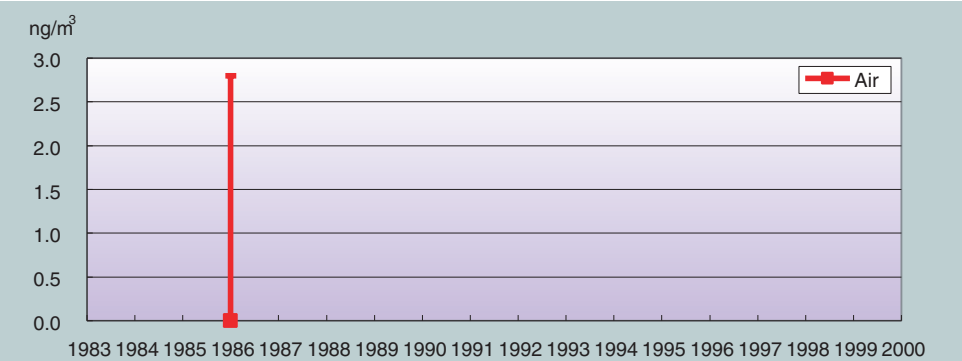


	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	27/ 78	29/ 94	12/ 96	6/ 102	15/ 93	13/ 90	9/ 102	5/ 108	3/ 105	5/ 108	1/ 99	1/ 93

Detection Limit: 0.1 - 10 ng/g-dry

Fig. 2-23 Detected frequency and detection range of *trans*-nonachlor

(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				16/ 73														

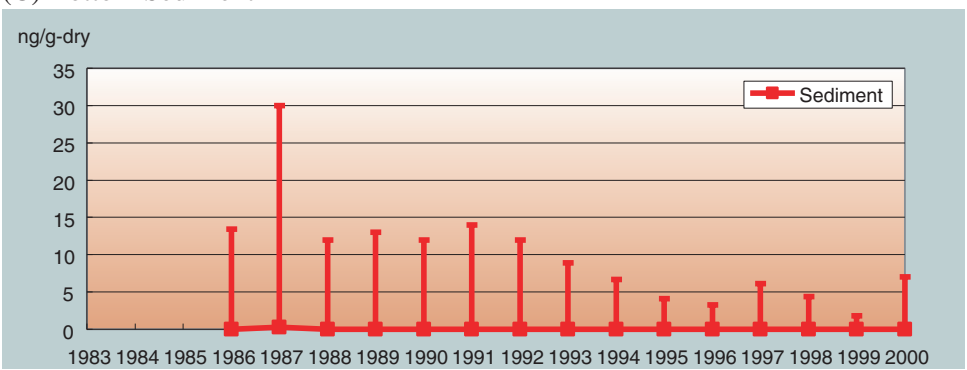
Detection Limit: 0.5 ng/m^3

(B) Surface Water

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/ 17	0/ 19	0/ 22	0/ 17	0/ 18	0/ 18	0/ 18	0/ 19	0/ 17	0/ 18	0/ 18	0/ 18	0/ 18		

Detection Limit: 0.01 μg/ℓ

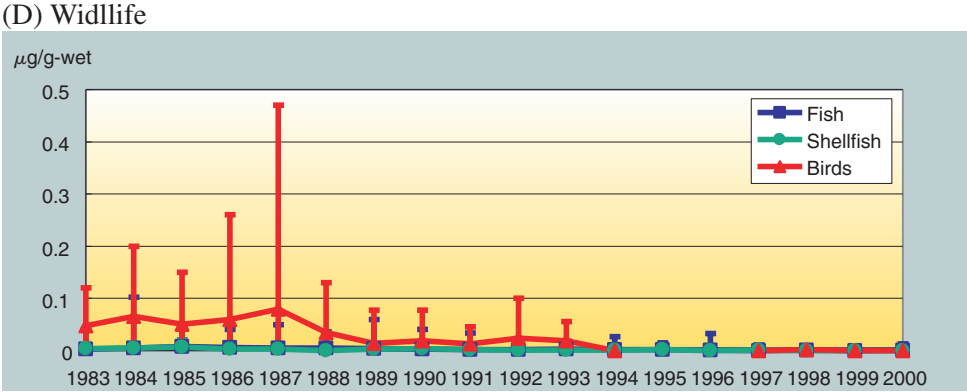
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				6/ 17	9/ 19	6/ 22	4/ 17	5/ 18	6/ 18	7/ 18	5/ 19	3/ 17	2/ 18	2/ 18	2/ 17	4/ 18	2/ 18	3/ 17

Detection Limit: 1 ng/g-dry

(D) Widllife



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	37/ 50	45/ 60	39/ 60	38/ 55	45/ 65	44/ 65	45/ 65	46/ 70	48/ 70	46/ 70	46/ 70	43/ 70	50/ 70	42/ 70	34/ 70	40/ 70	31/ 70	36/ 69
SF	11/ 20	15/ 20	15/ 20	18/ 20	15/ 20	8/ 20	13/ 21	15/ 25	20/ 30	15/ 30	15/ 30	15/ 30	20/ 30	15/ 30	15/ 30	10/ 30	15/ 30	14/ 30
B	6/ 10	9/ 10	10/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	10/ 10	6/ 10	0/ 5			5/ 10	6/ 10	2/ 10	5/ 10

Detection Limit: 0.001 μg/g-wet

Fig. 2-24 Detected frequency and detection range of *cis*-nonachlor

(A) Air

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A				0/ 73														

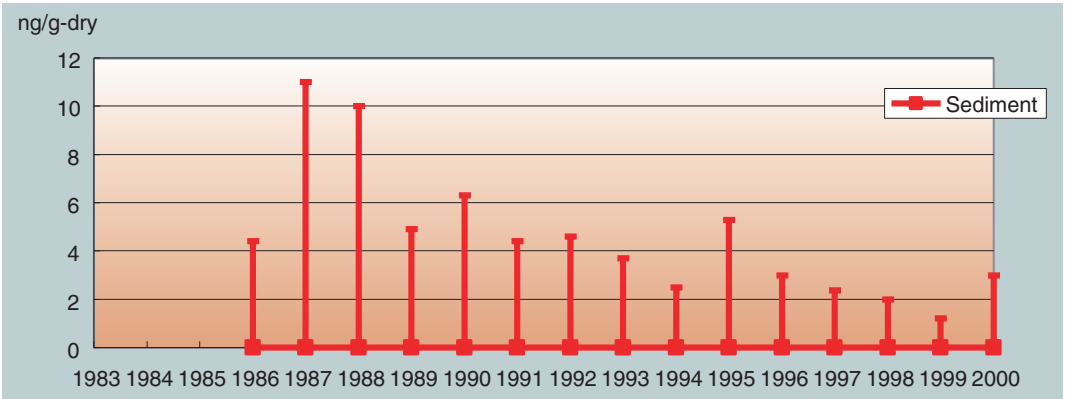
Detection Limit: 0.7 ng/m³

(B) Surface Water

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W				0/ 17	0/ 19	0/ 22	0/ 17	0/ 16	0/ 18	0/ 18	0/ 19	0/ 17	0/ 18	0/ 18	0/ 18	0/ 18		

Detection Limit: 0.01 μg/ℓ

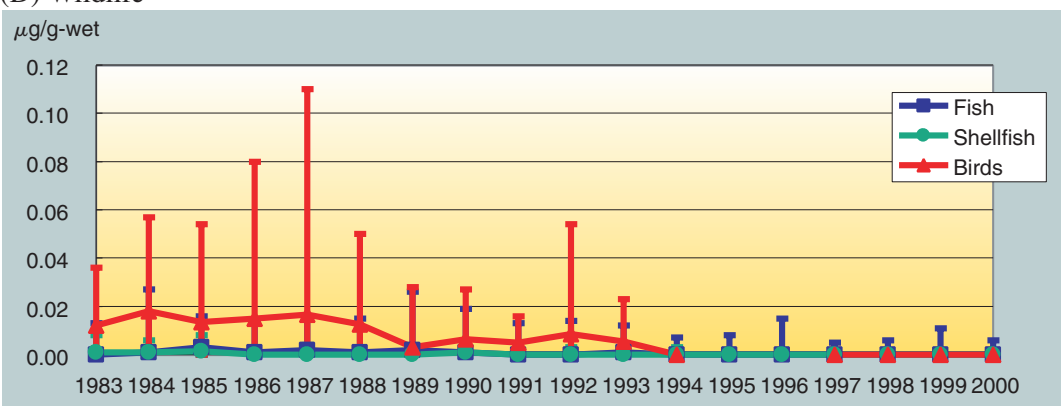
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S				3/ 17	5/ 19	3/ 22	4/ 17	2/ 16	4/ 18	4/ 18	4/ 19	2/ 17	2/ 18	2/ 18	2/ 17	3/ 18	1/ 18	2/ 17

Detection Limit: 1 ng/g-dry

(D) Wildlife

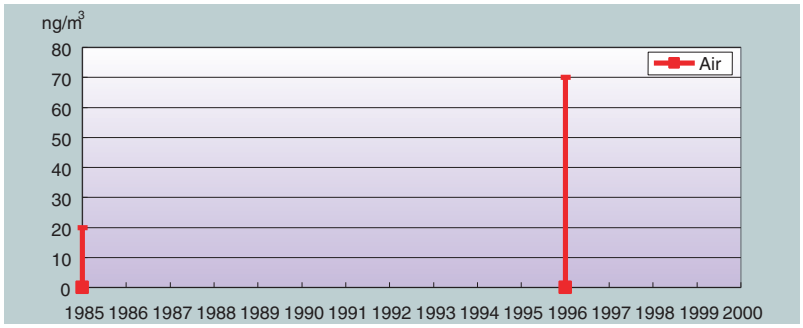


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	23/ 50	32/ 60	35/ 60	29/ 55	40/ 65	37/ 65	36/ 65	36/ 70	33/ 70	30/ 70	37/ 70	32/ 70	27/ 70	19/ 70	19/ 70	18/ 70	15/ 70	19/ 69
SF	10/ 20	10/ 20	10/ 20	10/ 20	9/ 20	6/ 20	8/ 21	15/ 25	10/ 30	15/ 30	10/ 30	15/ 30	10/ 30	5/ 30	10/ 30	5/ 30	0/ 30	1/ 30
B	5/ 10	8/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	5/ 10	0/ 5			0/ 10	0/ 10	0/ 10	0/ 10

Detection Limit: 0.001 μg/g-wet

Fig. 2-25 Detected frequency and detection range of 2,6-di-*tert*-butyl-4-methylphenol

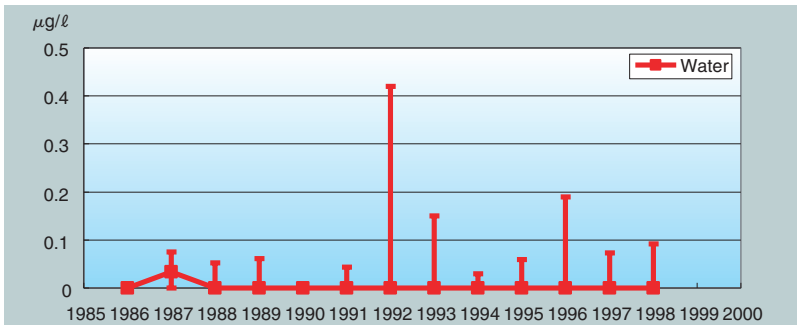
(A) Air



	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A	29/ 60											5/ 18				

Detection Limit: 1 - 32 ng/m^3

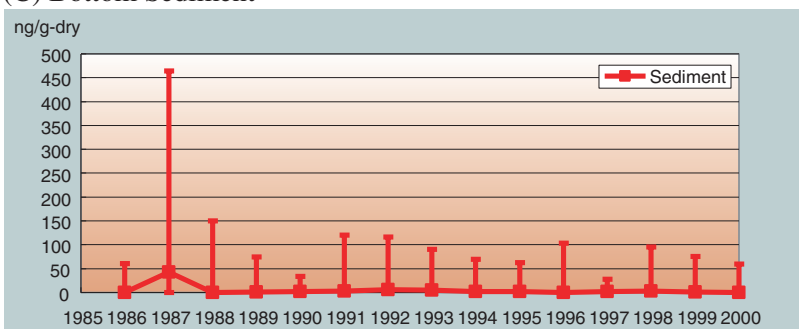
(B) Surface Water



	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W		0/ 17	2/ 4	3/ 22	2/ 16	1/ 18	2/ 18	2/ 18	3/ 19	3/ 17	1/ 18	3/ 48	1/ 18	4/ 18		

Detection Limit: 0.01 - 0.3 μg/ℓ

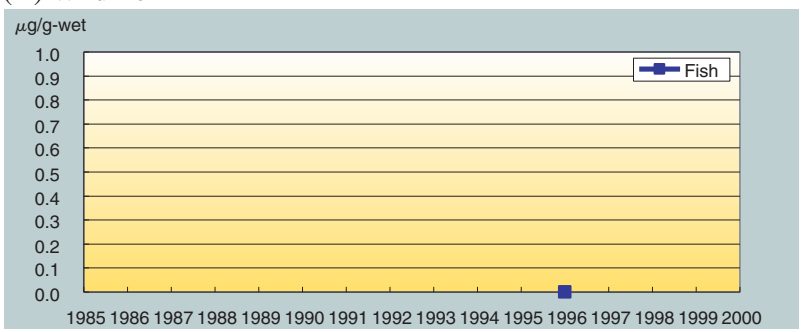
(C) Bottom Sediment



	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S		5/ 17	4/ 4	9/ 22	5/ 16	9/ 18	10/ 18	12/ 18	14/ 19	9/ 16	12/ 18	11/ 51	12/ 17	14/ 18	7/ 18	7/ 17

Detection Limit: 1 - 90 ng/g-dry

(D) Wildlife

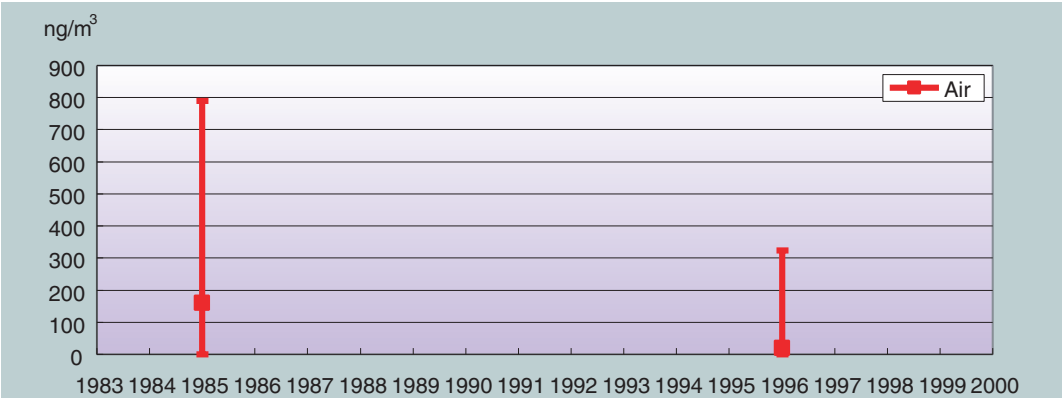


	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F												0/ 33				

Detection Limit: 58 ng/g-wet

Fig. 2-26 Detected frequency and detection range of di-2-ethylhexylphthalate

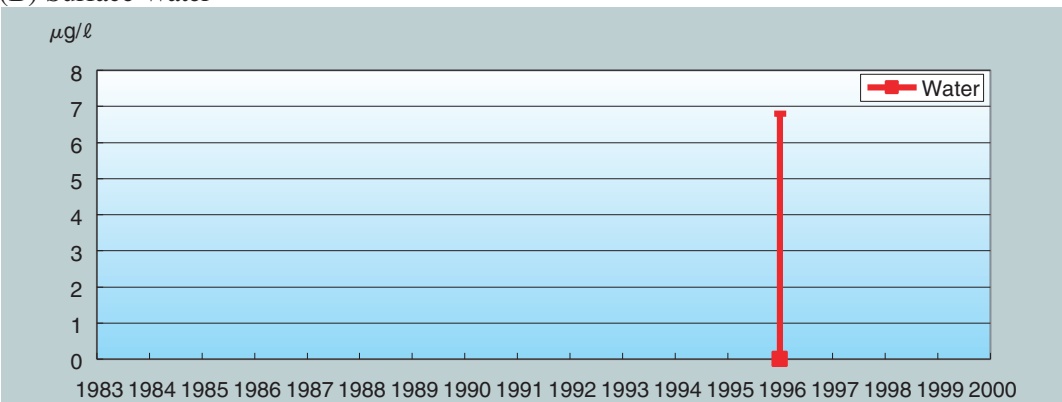
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A			59/ 61											11/ 18				

Detection Limit: 5 - 6 ng/m³

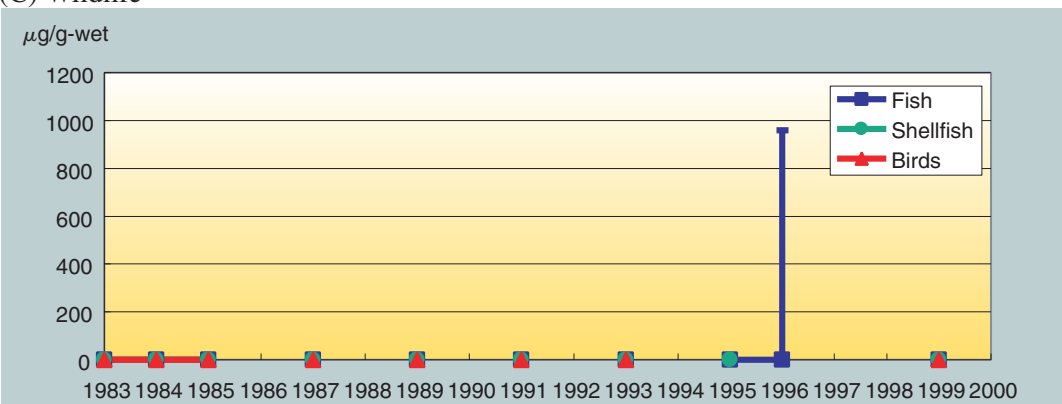
(B) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W														4/ 33				

Detection Limit: 3.9 μg/ℓ

(C) Wildlife

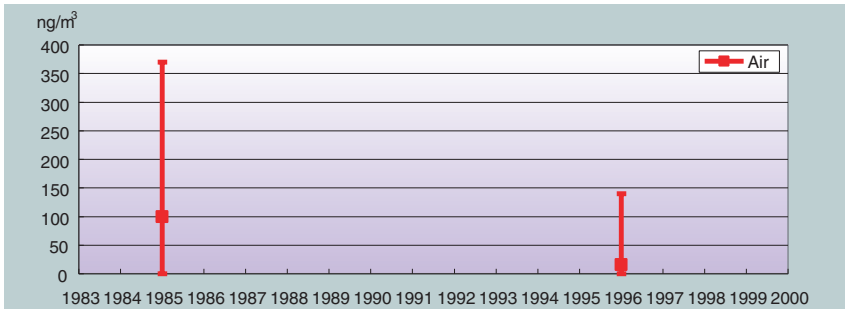


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	1/ 60	0/ 60		1/ 65		0/ 65		0/ 70		0/ 70		0/ 70	9/ 27			2/ 70	
SF	0/ 20	0/ 20	0/ 20		0/ 20		1/ 21		3/ 30		0/ 30		4/ 30				0/ 30	
B	0/ 10	0/ 10	0/ 10		0/ 10		0/ 10		0/ 10		0/ 5						0/ 10	

Detection Limit: 0.06 - 0.1 μg/g-wet

Fig. 2-27 Detected frequency and detection range of di-n-butylphthalate

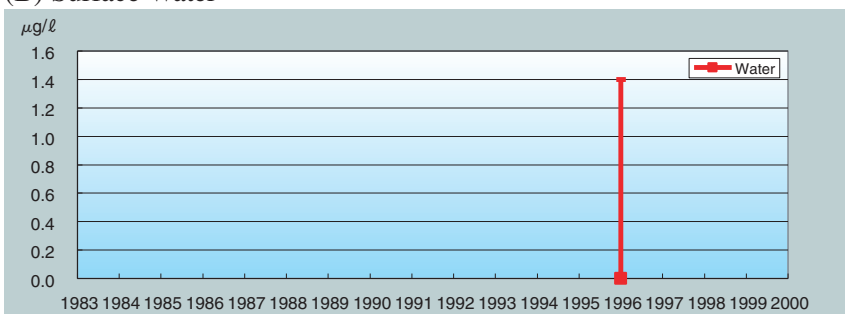
(A) Air



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A			56/ 63											13/ 15				

Detection Limit: 5 - 10 ng/m^3

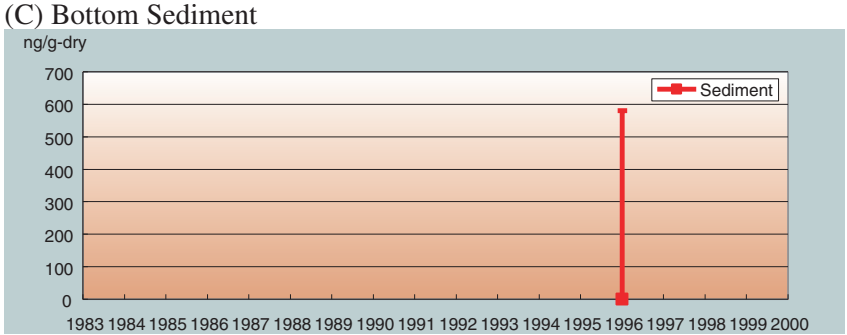
(B) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W														5/ 30				

Detection Limit: 0.2 μg/ℓ

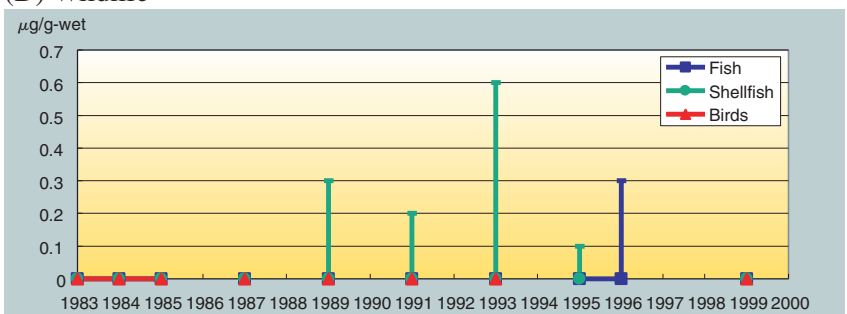
(C) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S														7/ 30				

Detection Limit: 140 ng/g-dry

(D) Wildlife

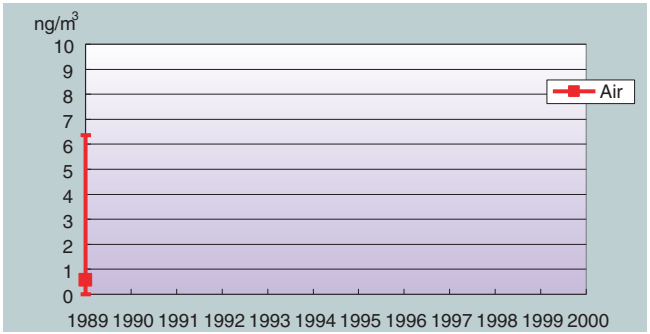


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	0/ 50	0/ 60	0/ 60		0/ 65		0/ 65		0/ 70		0/ 70		0/ 70	9/ 30			0/ 70	
SF	0/ 20	0/ 20	0/ 20		0/ 20		1/ 21		2/ 30		5/ 30		2/ 30				0/ 30	
B	0/ 10	0/ 10	0/ 10		0/ 10		0/ 10		0/ 10		0/ 10						0/ 10	

Detection Limit: 0.04 - 0.1 μg/g-wet

Fig. 2-28 Detected frequency and detection range of benzo[a]pyrene

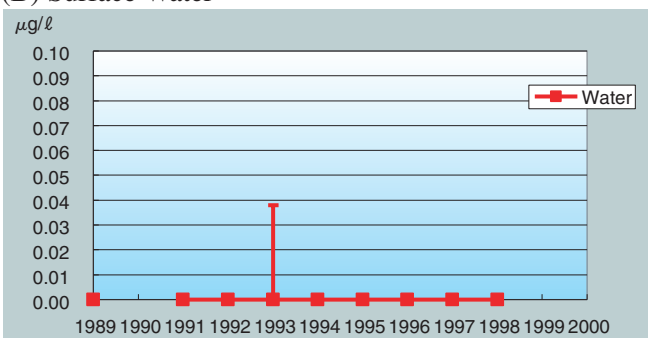
(A) Air



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
A	31/ 39											

Detection Limit: 0.3 ng/m^3

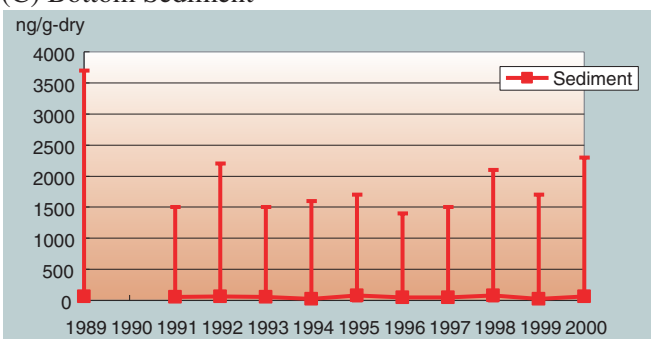
(B) Surface Water



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	0/ 138		0/ 18	0/ 18	1/ 19	0/ 17	0/ 18	0/ 18	0/ 18	0/ 17		

Detection Limit: 0.01 - 0.1 μg/ℓ

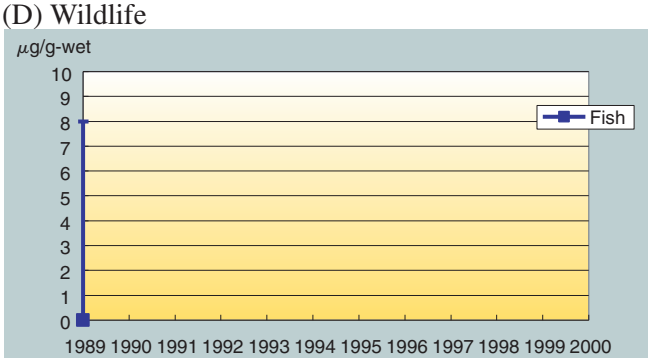
(C) Bottom Sediment



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	122/ 134		16/ 18	18/ 18	18/ 19	14/ 17	16/ 18	17/ 18	15/ 17	16/ 17	15/ 18	12/ 17

Detection Limit: 1 - 5 ng/g-dry

(D) Wildlife

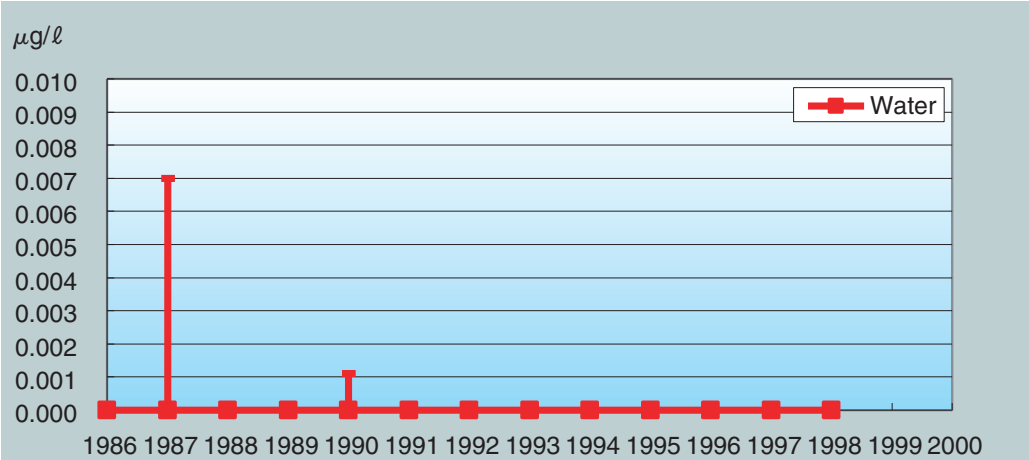


	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	1/ 123											

Detection Limit: 3 μg/g-wet

Fig. 2-29 Detected frequency and detection range of *o*-terphenyl

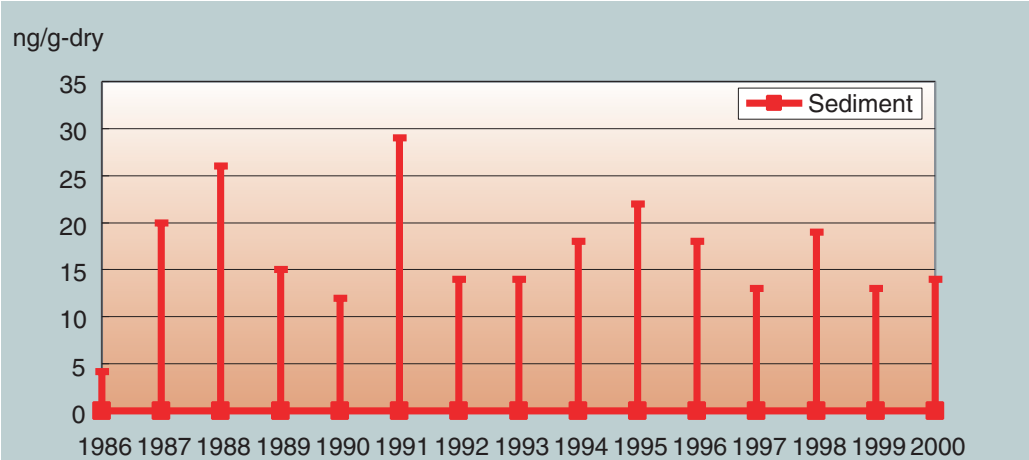
(A) Surface Water



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	0/17	1/19	0/22	0/17	1/18	0/18	0/18	0/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/ℓ

(B) Bottom Sediment

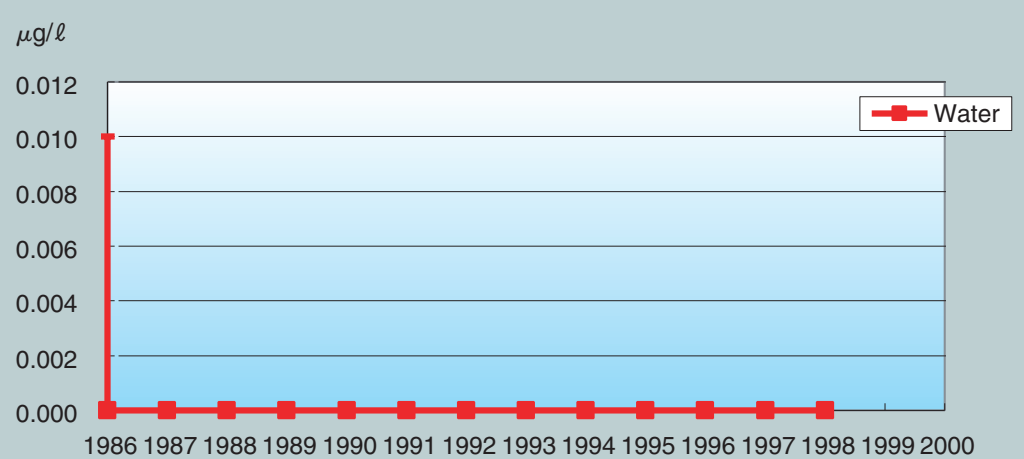


	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	3/17	4/19	1/22	4/17	6/18	4/18	6/18	8/19	4/17	4/18	1/18	4/17	3/18	3/18	5/17

Detection Limit: 1 ng/g-dry

Fig. 2-30 Detected frequency and detection range of *m*-terphenyl

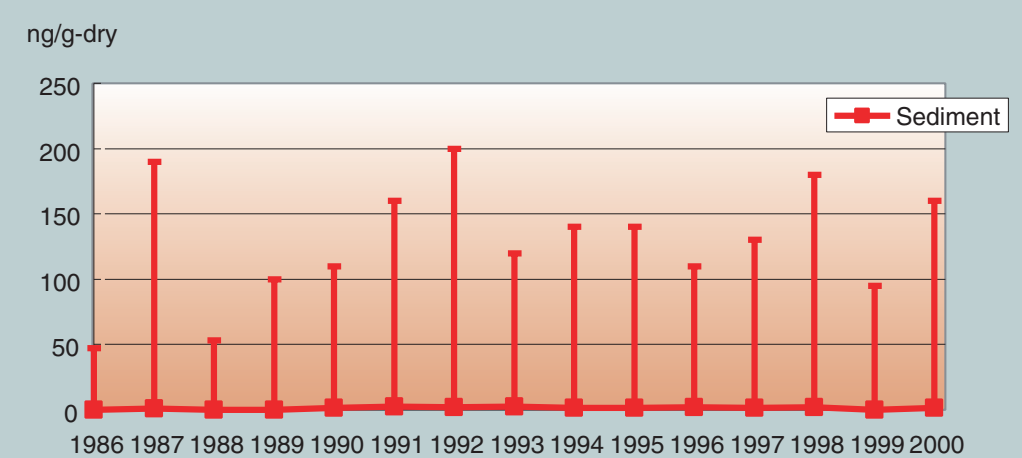
(A) Surface Water



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	1/ 17	0/ 19	0/ 22	0/ 17	0/ 18	0/ 18	0/ 18	0/ 19	0/ 17	0/ 18	0/ 18	0/ 18	0/ 18		

Detection Limit: 0.0 μg/ℓ

(B) Bottom Sediment



	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	5/ 17	10/ 19	6/ 22	10/ 17	12/ 18	14/ 18	15/ 18	15/ 19	12/ 17	14/ 18	14/ 18	13/ 17	14/ 18	11/ 18	11/ 17

Detection Limit: 1 ng/g-dry

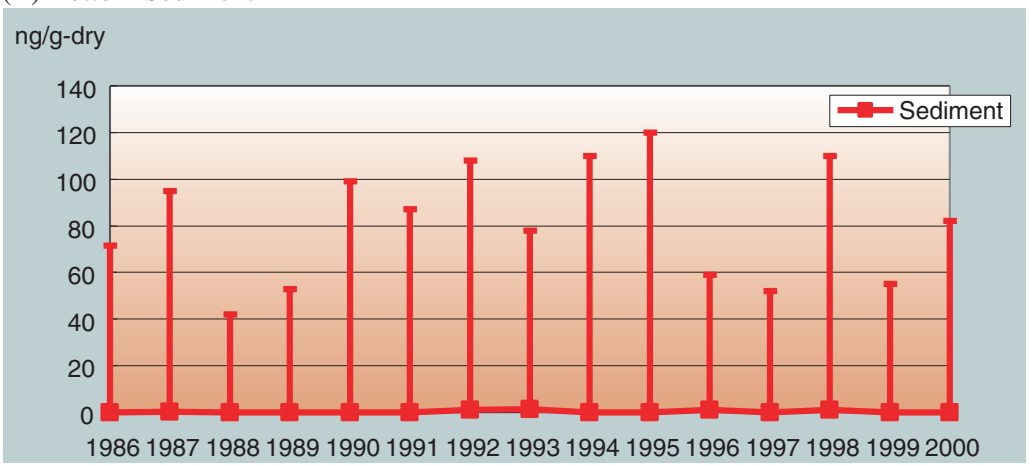
Fig. 2-31 Detected frequency and detection range of *p*-terphenyl

(A) Surface Water

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	0/17	0/19	0/22	0/17	0/18	0/18	0/18	0/19	0/17	0/18	0/18	0/18	0/18		

Detection Limit: 0.01 μg/ℓ

(B) Bottom Sediment

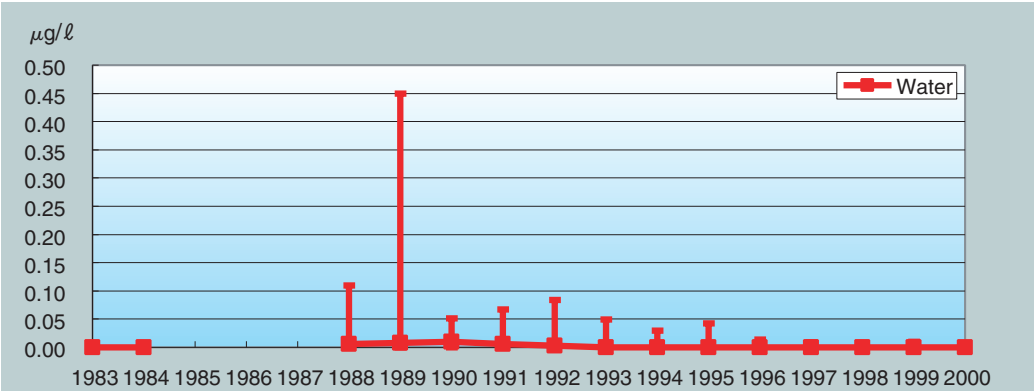


	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	4/17	6/19	7/22	9/17	11/18	14/18	15/18	15/19	12/17	12/18	9/18	11/17	12/18	5/18	10/17

Detection Limit: 1 ng/g-dry

Fig. 2-32 Detected frequency and detection range of tributyl tin compounds

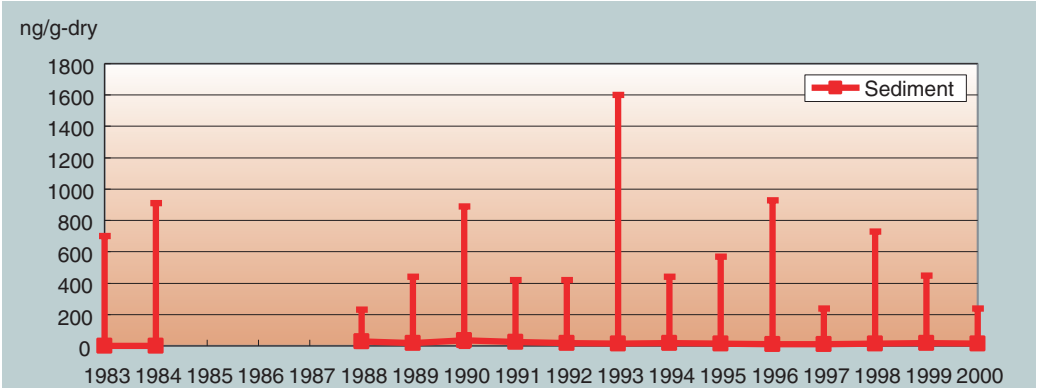
(A) Surface Water



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	0/ 75	0/ 138				34/ 51	46/ 78	60/ 77	60/ 93	52/ 99	42/ 99	35/ 96	31/ 105	27/ 105	21/ 107	20/ 76	16/ 105	9/ 102

Detection Limit: 0.003 - 0.1 μg/l

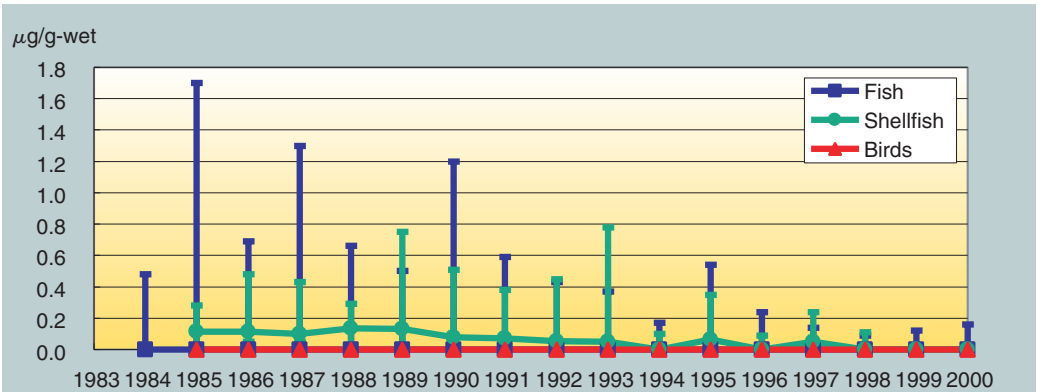
(B) Bottom Sediment



	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	9/ 75	29/ 138				51/ 51	63/ 78	76/ 90	85/ 95	87/ 102	83/ 102	87/ 102	87/ 104	94/ 108	85/ 105	86/ 105	85/ 103	81/ 99

Detection Limit: 0.1 - 1 ng/g-dry

(C) Wildlife

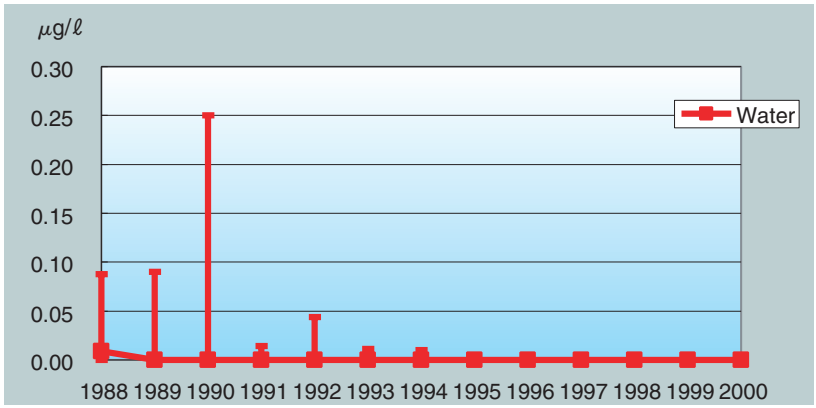


	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F		29/ 135	23/ 60	22/ 55	17/ 65	27/ 65	23/ 65	26/ 70	21/ 70	22/ 70	23/ 70	15/ 70	13/ 70	23/ 70	13/ 70	17/ 70	9/ 70	10/ 70
SF			15/ 20	20/ 20	20/ 20	12/ 20	16/ 21	24/ 25	18/ 30	17/ 30	15/ 30	6/ 30	20/ 30	15/ 30	18/ 30	10/ 30	0/ 30	0/ 30
B			0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 5	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10	0/ 10

Detection Limit: Fish(0.05 - 3 μg/g-wet), Shellfish(0.05 μg/g-wet), Birds(0.05 μg/g-wet)

Fig. 2-33 Detected frequency and detection range of triphenyl tin compounds

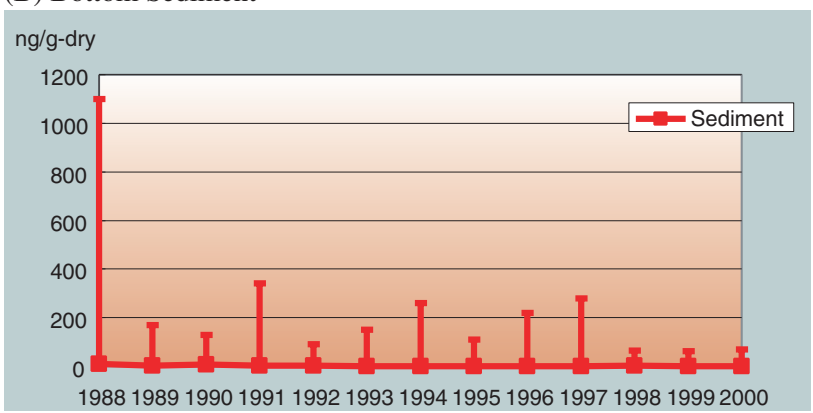
(A) Surface Water



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
W	73/ 119	39/ 78	19/ 72	5/ 90	10/ 90	2/ 90	4/ 92	0/ 87	0/ 108	0/ 108	4/ 102	3/ 105	0/ 102

Detection Limit: 0.001 - 0.01 μg/ℓ

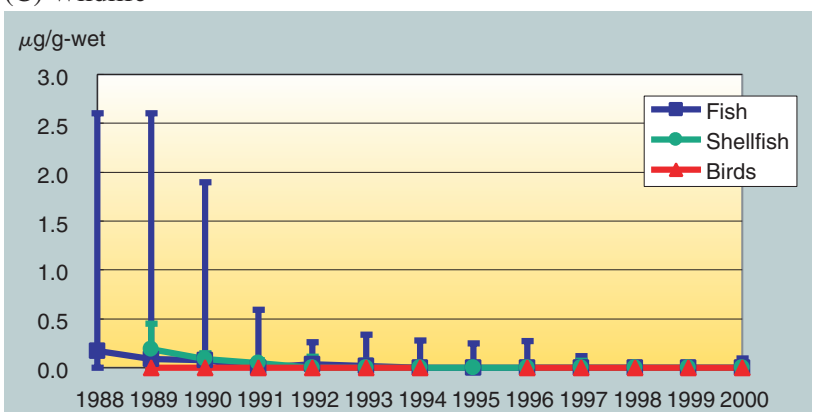
(B) Bottom Sediment



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
S	99/ 129	50/ 78	51/ 77	55/ 89	60/ 95	55/ 96	47/ 88	48/ 93	41/ 99	36/ 91	54/ 94	45/ 99	52/ 96

Detection Limit: 0.3 - 1 ng/g-dry

(C) Wildlife



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
F	118/ 144	40/ 65	50/ 70	33/ 70	40/ 70	38/ 70	28/ 70	21/ 70	20/ 70	19/ 70	14/ 70	10/ 70	13/ 70
SF		17/ 21	20/ 25	22/ 30	10/ 30	5/ 30	5/ 30	0/ 30	0/ 30	5/ 30	0/ 30	0/ 30	1/ 30
B		5/ 10	5/ 10	0/ 10	0/ 10	0/ 10	0/ 5		0/ 10	0/ 10	0/ 10	0/ 10	0/ 10

Detection Limit: 0.02 μg/g-wet

Table 2-3 Detected frequency and detection range of PBDDs / PBDFs

	medium	Bottom Sediment			Fish			Shellfish			Reference
	fiscal year	1998	1999	2000	1998	1999	2000	1998	1999	2000	
34	2,3,7,8-T4BDD	0/ 39	1/ 39	1/ 36	0/ 38	0/ 37		0/ 1			maximum value in bottom seddiment: 3.0 pg/g-dry
35	1,2,3,7,8-P5BDD	0/ 39	0/ 39	0/ 36	0/ 38	0/ 37		0/ 1			
36	1,2,3,4,7,8-H6BDD + 1,2,3,6,7,8-H6BDD	0/ 38	0/ 39	0/ 36	0/ 39	0/ 37		0/ 1			
37	1,2,3,7,8,9-H6BDD	0/ 39	0/ 39	0/ 36	0/ 38	0/ 37		0/ 1			
38	2,3,7,8-T4BDF	0/ 39	3/ 39	5/ 36	0/ 38	0/ 37		0/ 1			maximum value in bottom seddiment: 2.3 pg/g-dry
39	1,2,3,7,8-P5BDF	0/ 39	0/ 39	0/ 36	0/ 38	0/ 37		0/ 1			
40	2,3,4,7,8-P5BDF	0/ 39	0/ 39	0/ 36	0/ 38	0/ 37		0/ 1			
41	1,2,3,4,7,8-H6BDF	0/ 39	0/ 39	0/ 36	0/ 38	0/ 37		0/ 1			

Detection Limit:

	Bottom Sediment (pg/g-dry)	Fish (pg/g-wet)	Shellfish (pg/g-wet)
2,3,7,8-T4BDD	0.5 - 1	0.05 - 0.1	0.05
1,2,3,7,8-P5BDD	1 - 5	0.05 - 0.5	0.05
1,2,3,4,7,8-H6BDD + 1,2,3,6,7,8-H6BDD	2.9 - 100	0.22 - 5	0.22
1,2,3,7,8,9-H6BDD	0.6 - 50	0.5 - 5	0.5
2,3,7,8-T4BDF	0.5 - 1	0.05 - 0.1	0.05
1,2,3,7,8-P5BDF	0.5 - 5	0.08 - 0.5	0.08
2,3,4,7,8-P5BDF	0.3 - 5	0.07 - 0.5	0.07
1,2,3,4,7,8-H6BDF	5 - 50	0.3 - 5	0.3