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Supplementary Material

Wet and lipid normalized total toxaphene concentrations, percent homologue contribution, as well as individual Parlar Congener concentrations.

Toxaphene in Great Lakes Fish: A Temporal, Spatial, and Trophic Study

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Sample Identification	Wet Wt	Wet	Lipid	µg/ g	% Homologue Contribution					Parlar Congener† Conc. (ng/g lipid)					
	g	% lipid	µg/ g		6 Cl	7 Cl	8Cl	9 Cl	10 Cl	DCI	#26	#32	#50	#62	#69
Superior Trout- 1982															
82-02-101*	10.09	17.6	6.7	38	3.80	32.70	43.40	20.00	0.00	0.58	56	260	940	360	0
82-02-102*	11.97	17.4	6.2	36	6.70	22.60	50.20	20.50	0.00	0.41	0	330	880	92	0
82-02-102'*	12.03	16.8	2.9	17	1.60	23.60	48.90	25.90	0.00	0.35	8.3	190	680	0	0
82-02-103*	failed														
82-02-104*	10.09	17.2	3.5	20	2.80	29.60	41.20	26.40	0.10	0.48	37	120	500	0	0
82-02-105*	10.02	18.8	3.2	17	4.70	28.60	36.80	29.80	0.10	0.50	26	130	550	0	0
Michigan Trout- 1982															
82-05-101*	9.89	20.7	6.1	29	4.10	40.10	34.60	21.10	0.10	0.79	27	150	630	200	0
82-05-102*	9.99	20.8	7.7	37	4.20	52.00	25.50	18.30	0.00	1.25	36	210	760	91	0
82-05-103*	10.06	16.7	5	30	4.50	31.30	44.00	20.20	0.10	0.56	150	540	1700	1100	0
82-05-104*	9.84	18	3.4	19	3.30	23.60	47.10	25.80	0.10	0.37	110	370	1100	940	24
82-05-105*	10.14	14.7	2.9	20	4.20	25.20	42.30	28.20	0.20	0.42	97	450	1400	1000	24
Huron Trout- 1982															
82-06-101*	9.75	18.7	5.1	27	5.00	43.50	30.60	21.00	0.00	0.94	23	160	650	190	0
82-06-102*	9.9	14.1	4.7	33	3.40	20.00	46.70	29.70	0.20	0.31	160	440	1300	2500	70
82-06-103*	10.15	15.1	6.2	41	3.50	25.80	46.30	24.30	0.10	0.42	150	600	1700	2400	14
82-06-104*	10.01	19	4.7	25	4.00	25.10	45.10	25.60	0.20	0.41	88	350	1000	1300	27
82-06-105*	9.84	20.6	5.1	13	7.50	32.20	41.70	18.30	0.20	0.66	97	450	1600	5100	15
Erie Walleye- 1982															
82-09-301	12.35	10.3	0.26	2.5	27.10	40.50	28.90	3.40	0.00	2.09	20	57	56	110	0
82-09-301'	12.09	11.4	0.27	2.3	7.70	42.40	43.50	6.40	0.00	1.00	17	55	76	190	0
82-09-302	9.92	12.8	0.24	1.9	7.00	50.80	31.30	10.90	0.00	1.37	9.2	13	33	42	0
82-09-303	12.45	10	0.16	1.7	10.20	46.20	37.20	6.40	0.00	1.29	15	46	68	100	0
82-09-304	11.95	11.9	0.33	2.8	4.80	46.80	41.00	7.40	0.00	1.07	17	54	81	140	0
82-09-305	12.2	12.8	0.27	2.1	9.80	43.90	41.00	5.30	0.00	1.16	15	42	47	55	0
Ontario Trout- 1982															
82-10-101*‡	9.99	23.2	2.3	10	5.50	76.10	3.00	15.30	0.10	4.46	6.8	43	150	92	0
82-10-102	9.98	21.1	3.9	18	9.30	27.90	42.30	20.20	0.20	0.60	11	52	170	350	0
82-10-103	9.99	24.1	4.1	17	8.60	27.00	45.20	19.10	0.20	0.55	10	48	160	290	0
82-10-104	9.82	20.1	5	25	11.50	24.70	44.60	18.80	0.30	0.57	14	60	190	300	0
82-10-105	9.93	14.6	7	48	8.40	20.50	46.50	23.80	0.40	0.41	18	120	350	730	0

*Quantitated using PCB-204 instead of ³⁷Cl₆-*t*-nonachlor †Structures of congeners in the Parlar standard: #26 (T2; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*,8*c*,10*a*,10*b*-octachlorobornane), #32 (2,2,5-*endo*,6-*exo*,8*b*, 9*c*,10*a*-heptachlorobornane), #50 (T12; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*,8*c*,9*c*,10*a*,10*b*-nonachlorobornane), #62 (2,2,5,5,8*b*,8*c*,9*c*,10*a*,10*b*-nonachloro-bornane), #69 (2,2,5,5,6-*exo*,8*b*,8*c*,9*c*,10*a*,10*b*-decachlorobornane). ‡Not included in DCI averages.

Sample Identification	Wet Wt		Wet µg/ g	Lipid µg/ g	6 Cl	% Homologue Contribution				DCI	Parlar Congener† Conc. (ng/g lipid)				
	g	% lipid				7 Cl	8Cl	9 Cl	10 Cl		#26	#32	#50	#62	#69
Superior Smelt- 1982															
82-02-201	12.03	10.5	0.43	4.1	6.80	20.60	44.60	27.90	0.10	0.38	3.3	13	75	97	0
82-02-202	11.2	10.7	0.43	4	4.50	19.30	48.20	27.90	0.10	0.31	2.9	14	75	180	0
82-02-203	10.9	9.7	0.43	4.4	6.90	27.80	48.10	17.00	0.10	0.53	93	470	970	880	4.3
82-02-203'	11.81	9.5	0.51	5.4	6.40	25.00	50.00	18.50	0.10	0.46	110	500	1100	1700	5.4
82-02-204	11.32	10.8	0.42	3.9	5.00	26.90	48.70	19.30	0.10	0.48	89	300	830	1300	6.6
82-02-205	9.67	9.5	0.35	3.7	5.50	27.50	47.30	19.60	0.10	0.49	97	360	1000	1500	5.7
Michigan Smelt- 1982															
82-05-201	11.01	7.7	0.59	7.7	8.70	31.60	43.00	16.60	0.10	0.68	110	310	1100	1300	7.5
82-05-202	10.28	8.2	0.92	11	7.50	21.60	49.20	21.70	0.00	0.41	5.2	32	170	290	0
82-05-203	10.12	7.2	0.47	6.5	4.20	24.50	51.60	19.70	0.00	0.40	3.8	21	84	30	0
82-05-204	10.34	7.3	0.82	11	8.10	22.70	48.90	20.30	0.00	0.51	5.2	35	170	34	0
82-05-205	10.47	6.6	0.9	14	5.70	27.90	48.50	17.90	0.00	0.46	7.6	37	170	62	0
Huron Smelt- 1982															
82-06-201	10.01	7.5	0.82	11	7.30	18.60	46.40	27.60	0.10	0.35	2.5	44	210	270	0
82-06-202	11.65	5.4	0.93	17	6.50	16.20	50.70	26.40	0.10	0.29	5.2	50	280	530	0
82-06-202'	10.58	5.5	0.79	14	6.70	18.30	48.50	26.40	0.10	0.33	4.8	44	240	390	0
82-06-203	12.05	6.3	0.81	13	5.20	23.40	46.40	24.90	0.10	0.40	0	46	250	270	0
82-06-205	12.87	6.2	0.77	12	10.60	18.90	48.10	22.30	0.10	0.42	2.4	48	200	260	0
82-06-206	11.96	6	0.81	13	7.00	24.40	4.50	23.90	0.10	0.46	6.4	46.3	240	280	0
Erie Smelt- 1982															
82-09-201	9.75	5.7	0.19	3.4	10.60	47.20	31.00	11.00	0.10	1.38	2.1	5.8	16	6.7	0
82-09-202	10.15	7.4	0.17	2.3	8.50	51.20	30.30	9.90	0.10	1.49	1.5	4.0	9.8	4.9	0
82-09-203	10.22	6.5	0.16	2.5	15.10	47.40	27.30	10.10	0.10	1.67	1.2	4.5	11	3.9	0
82-09-204	12.41	6.3	0.16	2.6	12.20	48.20	31.90	7.70	0.10	1.53	1.6	4.2	9.8	2.9	0
82-09-205	12.91	5.6	0.11	1.9	9.70	45.50	34.00	10.70	0.10	1.23	2.0	4.4	11	1.5	0
Ontario Smelt- 1982															
82-10-201	12.31	5.2	0.72	14	4.30	23.30	41.90	30.00	0.40	0.38	5.8	52	250	150	4.0
82-10-202	12.62	6.4	0.68	11	5.80	25.50	45.70	22.70	0.30	0.46	4.7	37	150	120	2.4
82-10-203	12.56	7.9	0.83	11	6.20	19.40	47.60	26.30	0.40	0.40	3.7	35	160	120	2.6
82-10-204	12.89	6.5	0.9	14	5.50	23.80	48.60	22.00	0.20	0.42	5.2	43	190	96	2.3
82-10-205	12.67	6.8	0.48	7	8.50	34.50	33.70	23.00	0.30	0.76	4.4	21	100	44	1.5

*Quantitated using PCB-204 instead of $^{37}\text{Cl}_6$ -*t*-nonachlor †Structures of congeners in the Parlar standard: #26 (T2; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*,8*c*,10*a*,10*b*-octachlorobornane), #32 (2,2,5-*endo*,6-*exo*,8*b*, 9*c*,10*a*-heptachlorobornane), #50 (T12; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*,8*c*,9*c*,10*a*,10*b*-nonachlorobornane), #62 (2,2,5,5,8*b*,8*c*,9*c*,10*a*,10*b*-nonachloro-bornane), #69 (2,2,5,5,6-*exo*,8*b*,8*c*,9*c*,10*a*,10*b*-decachlorobornane). ‡Not included in DCI averages.

Sample Identification	Wet Wt	Wet	Lipid	µg/ g	% Homologue Contribution				Parlar Congener†		Conc. (ng/g lipid)				
	g	% lipid	µg/ g		6 Cl	7 Cl	8Cl	9 Cl	10 Cl	DCI	#26	#32	#50	#62	#69
Superior Trout- 1992															
920140001	9.74	23	8.3	36	2.50	14.40	72.10	10.90	0.00	0.20	360	0	0	0	0
920140002‡	9.21	16.9	2.6	16	41.80	41.80	4.30	4.90	7.10	9.16	450	0	0	0	0
920140003	9.72	18.4	6.2	34	13.30	6.20	71.90	2.00	6.70	0.26	450	0	0	0	0
920140004	9.27	19.1	14	75	5.70	33.80	28.90	31.50	0.10	0.65	420	0	0	0	0
920140004'	9.8	17.6	16	90	4.90	9.80	80.90	4.30	0.10	0.17	430	0	0	0	0
920140005	9.45	16.9	2.5	15	28.00	5.30	56.00	8.00	2.30	0.52		0	0	0	0
Michigan Trout- 1992															
920224001	10.35	20.3	1.4	6.9	1.70	61.30	36.20	0.80	0.00	1.70	270	0	0	0	0
920224002	10.86	20.5	2.1	10	4.00	48.50	40.80	6.70	0.00	1.11	470	0	0	0	0
920224003	10.77	19.4	1.5	7.9	0.30	54.00	45.80	0.00	0.00	1.18	280	0	0	0	0
920224004	10.41	17.6	1.9	11	1.80	49.10	42.20	6.80	0.00	1.04	350	0	0	0	0
920224008	10.67	15.7	0.36	2.3	9.80	49.10	40.90	0.20	0.10	1.43	156	0	0	0	0
920224008'	10.52	14.9	0.28	1.9	14.50	36.60	48.90	0.00	0.00	1.04	140	0	0	0	0
Huron Trout- 1992															
920307001	9.88	19.8	2.3	12	0.30	13.70	57.60	28.30	0.00	0.16	160	0	690	0	0
920307002	9.33	18.3	0.67	3.7	0.80	15.50	63.90	19.80	0.00	0.19	90	0	160	0	0
920307003	9.22	17.9	3.5	19	0.40	15.90	77.40	6.30	0.00	0.19	440	0	0	0	0
920307004	9.58	17.8	2.8	16	0.40	16.50	74.70	8.30	0.00	0.20	380	0	0	0	0
920307005	9.37	16.8	2.5	15	1.00	17.30	79.70	1.90	0.00	0.22	350	0	0	0	0
Erie Walleye- 1992															
920512001	11.32	10.3	0.2	1.9	22.30	48.50	24.30	4.80	0.10	2.43	29	0	21	0	0
920512002	10.62	9.2	0.11	1.2	42.50	24.80	26.10	7.60	0.00	2.00	20	0	23	0	0
920512003	9.99	7.2	0.09	1.3	46.40	14.40	29.50	9.80	0.00	1.55	20	0	29	0	0
920512004	10.1	8.3	0.094	1.1	63.90	0.70	20.90	14.50	0.00	1.83	18	0	30	0	0
920512005	9.82	9.9	0.15	1.5	44.50	32.20	19.30	3.90	0.10	3.30	18	34	14	0	0
920512005'	11.03	9.7	0.1	1.1	38.80	17.30	33.10	10.80	0.00	1.28	18	4	18	0	0
Ontario Trout- 1992															
920612001	10.67	17.5	0.35	2	31.90	27.70	28.00	11.40	0.20	1.51	0	0	130	0	0
920612002	10.14	19.6	0.3	1.5	20.30	37.40	36.40	5.80	0.20	1.37	61	0	0	0	0
920612003	10.03	20	1.2	6	29.70	18.80	36.50	14.70	0.40	0.95	0	0	300	0	0
920612004	10.2	17.6	0.32	1.8	34.30	12.40	41.50	11.50	0.30	0.88	0	0	98	0	0
920612005	10.83	18.6	0.55	2.9	21.40	22.80	51.30	4.20	0.30	0.80	66	0	0	0	0

*Quantitated using PCB-204 instead of ³⁷Cl₆-t-nonachlor †Structures of congeners in the Parlar standard: #26 (T2; 2-exo,3-endo,5-exo,6-endo,8b,8c,10a,10b-octachlorobornane), #32 (2,2,5-endo,6-exo,8b, 9c,10a-heptachlorobornane), #50 (T12; 2-exo,3-endo,5-exo,6-endo,8b,8c,9c,10a,10b-nonachlorobornane), #62 (2,2,5,5,8b,8c,9c,10a,10b-nonachloro-bornane), #69 (2,2,5,5,6-exo,8b,8c,9c,10a,10b-decachlorobornane). ‡Not included in DCI averages.

Sample Identification	Wet Wt		Wet µg/ g	Lipid µg/ g	% Homologue Contribution					DCI	Parlar Congener†Conc. (ng/g lipid)				
	g	% lipid			6 Cl	7 Cl	8Cl	9 Cl	10 Cl		#26	#32	#50	#62	#69
Superior Smelt- 1994															
940140001‡	10.32	5.7	0.097	1.7	75.10	12.60	5.40	6.90	0.00	7.14	0	0	0	310	0
940140002	9.92	4.5	0.1	2.3	1.00	22.10	71.80	5.00	0.00	0.30	17.2	0	0	0	0
940140003	10.3	4.8	0.28	5.9	0.50	17.60	81.00	0.80	0.00	0.22	0	0	0	0	0
940140004	10.16	5.7	0.099	1.7	0.70	23.10	66.10	10.10	0.00	0.31	0	0	0	0	0
940140004'	10.63	6	0.074	1.2	1.40	21.10	68.80	8.60	0.10	0.29	3.5	0	0	0	0
940140005	9.99	5.1	0.2	3.9	1.50	18.90	72.70	6.90	0.00	0.26	0	0	0	220	0
Michigan Smelt- 1994															
940224001	9.87	6.2	0.06	0.97	2.70	41.10	56.10	0.10	0.00	0.78	0	65	0	0	0
940224002	9.68	6	0.057	0.96	0.60	52.10	44.50	2.80	0.00	1.12	0	0	0	0	0
940224003	9.18	5.5	0.046	0.85	0.80	56.00	42.30	0.80	0.00	1.32	0	47	0	0	0
940224004	9.1	4.9	0.052	1.1	0.70	59.40	37.40	2.50	0.00	1.51	0	0	0	0	0
940224005	9.65	4.7	0.079	1.7	0.90	50.40	47.80	1.00	0.00	1.05	0	83	0	0	0
Ontario Smelt- 1994															
940614001	9.27	7.2	0.024	0.33	7.30	37.20	44.00	11.50	0.10	0.80	0	0	71	0	0
940614002	9.84	6.7	0.026	0.39	16.50	34.00	39.60	19.90	0.10	0.85	0	0	65	0	0
940614003	9.55	6.1	0.13	2.2	9.40	30.60	39.90	20.20	0.10	0.67	0	0	420	0	0
940614004	9.15	6.1	0.046	0.76	6.40	36.80	33.20	23.40	0.10	0.76	0	0	170	0	0
940614005	failed														
940614005'	9.48	6.2	0.11	1.8	6.70	48.10	38.30	6.20	0.70	1.23	390	0	140	0	0

*Quantitated using PCB-204 instead of ³⁷Cl₆-*t*-nonachlor †Structures of congeners in the Parlar standard: #26 (T2; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*,8*c*,10*a*,10*b*-octachlorobornane), #32 (2,2,5-*endo*,6-*exo*,8*b*, 9*c*,10*a*-heptachlorobornane), #50 (T12; 2-*exo*,3-*endo*,5-*exo*,6-*endo*,8*b*, 8*c*,9*c*,10*a*,10*b*-nonachlorobornane), #62 (2,2,5,5,8*b*,8*c*,9*c*,10*a*,10*b*-nonachloro-bornane), #69 (2,2,5,5,6-*exo*,8*b*,8*c*,9*c*,10*a*,10*b*-decachlorobornane). ‡Not included in DCI averages.