

Table 1

Trace Metal Levels in Fishes Collected During March, April
and May 1972, from Raccoon Creek, Church's Landing and
Hope Creek Sites on the Delaware River

Name of Fish	Month	Location	Concentration of Metals, ppm									
			µg/g Wet Tissue					µg/g Dry Tissue				
			Cr	Cu	Pb	Hg	Zn	Cr	Cu	Pb	Hg	Zn
Oldfish	March	Raccoon Creek	0.2	3.5	0.24	0.08	33.2	1.0	17.5	1.2	0.38	166.0
Striped Minnows	March	Raccoon Creek	0.4	3.2	< 0.30	0.07	23.2	2.0	16.0	< 1.2	0.36	116.0
Striped Minnows	March	Church's Landing	0.5	5.0	0.58	0.10	79.7	2.0	21.0	2.4	0.40	332.0
White Perch	March	Church's Landing	0.3	4.6	< 0.15	0.13	61.1	1.0	17.5	< 0.6	0.50	235.0
White Perch	March	Hope Creek	< 0.2	3.9	0.58	0.14	22.0	< 0.7	11.0	2.0	0.48	76.0
White Perch	March	Hope Creek	< 0.9	3.8	0.48	0.03	42.0	< 3.5	12.5	1.6	0.10	140.0
White Perch	March	Hope Creek	1.1	3.0	0.81	0.11	23.2	4.0	11.0	3.0	0.40	86.5
White Perch	March	Hope Creek	0.3	1.7	0.24	0.38	10.2	1.0	5.5	0.8	1.26	34.0
White Perch	April	Church's Landing	1.3	4.2	0.26	0.29	37.1	4.0	13.0	0.8	0.92	116.0
White Perch	April	Church's Landing	< 0.2	2.1	0.51	0.20	24.3	< 0.7	6.5	1.6	0.62	76.0
White Perch	April	Church's Landing	1.2	1.4	0.34	0.09	10.0	5.0	6.0	1.4	0.36	41.5
White Perch	April	Church's Landing	0.3	1.5	1.14	0.09	21.6	1.0	5.0	3.8	0.22	72.0
White Perch	April	Church's Landing	1.2	1.6	1.49	0.78	14.0	4.0	5.0	4.8	2.52	45.0
White Perch	April	Church's Landing	0.6	1.4	0.11	0.30	12.0	2.0	5.0	0.4	1.06	43.0
White Perch	April	Hope Creek	0.5	2.0	0.32	0.12	14.9	2.0	7.5	1.2	0.46	55.0
White Perch	April	Hope Creek	0.7	1.6	0.10	0.12	18.3	2.6	6.5	0.4	0.48	73.0
White Perch	April	Hope Creek	0.4	1.1	1.18	0.57	10.4	1.6	4.0	4.2	2.02	37.0
White Perch	April	Hope Creek	0.6	1.4	0.56	0.49	10.4	2.0	5.0	2.0	1.76	37.0
White Perch	April	Hope Creek	0.3	1.3	0.10	0.86	8.8	1.0	5.0	0.4	3.30	34.0
White Perch	May	Church's Landing	0.6	2.4	< 0.15	0.08	34.0	2.6	10.5	< 0.6	0.34	148.0
White Perch	May	Church's Landing	1.7	2.3	0.18	0.14	14.3	7.2	10.0	0.8	0.60	62.0
White Perch	May	Church's Landing	0.4	1.0	0.72	0.11	15.4	1.6	4.0	3.0	0.46	64.0
White Perch	May	Church's Landing	0.4	1.5	0.05	0.54	20.6	1.6	6.5	0.2	2.37	89.5
White Perch	May	Church's Landing	0.6	1.5	< 0.15	0.41	17.9	2.0	5.5	< 0.6	1.46	64.0
Average			0.59	2.38	0.43	0.26	24.11	2.24	9.04	1.56	0.95	93.4
± S.D.			0.41	1.21	0.40	0.23	17.11	1.59	4.94	1.34	0.85	70.7
Coef. of Variation			69.5	50.8	93.0	88.5	71.0	71.0	54.6	85.9	89.5	75.7

Trace Metal Levels in Flesh of Fishes Collected During
June 1971 - May 1972 from Racoon Creek, Church's Landing
and Hope Creek Sites on the Delaware River

* RC = Racoon Creek; CL = Church's Landing; HC = Hope Creek
 * Average of all the determinations.
 § For the purpose of calculating average, where concentration detectable concentration was used to compute the average.

Table 2B

Trace Metal Levels in Flesh of Fishes Collected During
June 1971 - May 1972 from Raccoon Creek, Church's Landing
and Hope Creek Sites on the Delaware River

Name of Fish	Location	Concentration of COPPER, ppm Wet Tissue									
		June	July	Aug.	Sept.	October	Nov.	Dec.	Jan.	Feb.	Average
Alewife	RC	0.97	1.28					2.22			2.43
	CL								4.20		
	HC								2.00		
Blueback Herring	CL						1.25		2.10		2.12
	HC								3.00		
Bay Anchovy	CL									2.40	1.76
	HC	0.75			0.25				3.80	1.60	
Silvery Minnows	RC								3.20		2.68
	CL								5.00	1.50	1.00
Brown Bullhead	RC	0.99	0.52		0.73	0.75		0.59			
	CL	0.71							1.40	2.30	1.01
	HC								1.10		
White Perch	RC	1.73									
	CL		0.70						4.60	1.40	1.50
	HC								1.70	1.30	
Striped Bass	CL	0.97	1.60					1.00	0.96	0.76	
	HC								1.60	1.50	1.35
Spot	CL	0.98	0.25					1.00	1.40		
	HC				0.98	0.75					0.74
Average ± S.D.			0.95 ± 0.42			0.88 ± 0.35		1.09 ± 0.58	2.33 ± 1.21		1.60 ± 1.11

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Table 2C

Trace Metal Levels in Flesh of Fishes Collected During
June 1971 - May 1972 from Raccoon Creek, Church's Landing
and Hope Creek Sites on the Delaware River

Concentration of LEAD, ppm Wet Tissue														
Name of Fish	Location	June	July	Aug.	Sept.	October	Nov.	Dec.	Jan.	Feb.	March	April	May	Average
Alewife	RC	< 0.15	0.60					0.33			0.58	0.26		0.36
	CL													
	HC													
Blueback Herring	CL						0.40				0.81	0.51		0.57
	HC													
Bay Anchovy	CL	2.20			0.90						0.48	0.10	< 0.15	0.75
	HC													
Silvery Minnows	RC										< 0.30	1.14	0.72	0.65
	CL													
Brown Bullhead	RC	0.05	0.14	0.21	0.24	0.05		0.02				0.34	0.18	0.27
	CL													
	HC													
White Perch	RC	0.10	0.67				0.23		0.50	0.27	< 0.15	0.11	0.15	0.32
	CL													
	HC													
Striped Bass	CL	0.24	0.35						0.20		1.49	0.56	0.05	0.48
	HC													
Spot	CL	0.15		0.30	0.54	0.35								0.34
	HC													
Average ± S.D.			0.42 ± 0.59			0.38 ± 0.25		0.39 ± 0.35				0.44 ± 0.40		0.42 ± 0.42

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Table 2D

Trace Metal Levels in Flesh of Fishes Collected During
June 1971 - May 1972 from Raccoon Creek, Church's Landing
and Hope Creek Sites on the Delaware River

Concentration of MERCURY, ppm Wet Tissue											
Name of Fish	Location	June	July	Aug.	Sept.	October	Nov.	Dec.	Jan.	Feb.	Average
Alewife	RC	0.54	0.36								
	CL										
	HC										
Blueback Herring	CL						0.27				
	HC										
Bay Anchovy	CL										
	HC	0.21				0.21					
Silvery Minnows	RC										
	CL										
Brown Bullhead	RC	0.13	0.33					0.45			
	CL	0.10									
	HC										
White Perch	RC	0.50									
	CL	1.00									
	HC										
Striped Bass	CL	0.30	0.27								
	HC										
Spot	CL	0.20	0.05								
	HC										
Average ± S.D.			0.33 ± 0.26								

Table 2H

Trace Metal Levels in Flesh of Fishes Collected During
June 1971 - May 1972 from Raccoon Creek, Church's Landing
and Hope Creek Sites on the Delaware River

Concentration of ZINC, ppm Wet Tissue											
Name of Fish	Location	June	July	Aug.	Sept.	October	Nov.	Dec.	Jan.	Feb.	Average
Alewife	RC	7.54	12.55					33.33			21.24
	CL								37.10		
	HC							22.00	14.90		
Blueback Herring	CL						10.13		24.30		19.21
	HC							23.20			
Bay Anchovy	CL	6.73				10.10				34.00	22.23
	HC							42.00	18.30		
Silvery Minnows	RC							23.20			34.98
	CL							79.70	21.60	15.40	
Brown Bullhead	RC	4.95		5.69	5.59	7.71		6.73			7.85
	CL	5.28							10.00	14.30	
	HC								10.40		
White Perch	RC	8.17									14.25
	CL		7.64				8.96		61.10	12.00	17.90
	HC						10.89	9.03	8.46	7.84	
Striped Bass	CL	25.50	8.14								15.86
	HC							16.50	14.00	20.60	
Spot	CL	5.90		7.23							7.02
	HC				5.60	9.35					
Average ± S.D.			8.78 ± 5.63			8.54 ± 2.05		13.65 ± 10.25	23.71 ± 17.38		16.35 ± 14.45

Table 3

Summary of Averages of Trace Metal Levels in Fishes
Collected During June 1971 - May 1972 from Racoon Creek,
Church's Landing and Hope Creek Sites on Delaware River

Variable	Concentration of Metals, ppm Wet Tissue				
Fish	Cr	Cu	Pb	Hg	Zn
Alewife	0.89	2.43	0.36	0.29	21.24
Blueback Herring	0.44	2.12	0.57	0.19	19.21
Bay Anchovy	0.48	1.76	0.75	0.13	22.23
Silvery Minnows	0.40	2.68	0.65	0.09	34.98
Brown Bullhead	0.66	1.01	0.27	0.28	7.85
White Perch	0.44	1.50	0.32	0.65	14.25
Striped Bass	0.78	1.35	0.48	0.71	15.86
Spot	0.55	0.74	0.34	0.15	7.02
Location					
Racoon Creek	0.50 ± 0.32	1.20 ± 0.84	0.17 ± 0.18	0.35 ± 0.16	9.13 ± 5.73
Church's Landing	0.62 ± 0.45	1.85 ± 1.30	0.39 ± 0.38	0.28 ± 0.25	21.53 ± 19.19
Hope Creek	0.60 ± 0.51	1.54 ± 1.00	0.57 ± 0.48	0.51 ± 0.49	14.41 ± 9.39
Period					
June 1971 - Aug. 1971	0.51 ± 0.36	0.95 ± 0.42	0.42 ± 0.59	0.33 ± 0.26	8.78 ± 5.63
Sept. 1971 - Nov. 1971	0.37 ± 0.38	0.88 ± 0.35	0.38 ± 0.25	0.38 ± 0.30	8.54 ± 2.05
Dec. 1971 - Feb. 1972	0.93 ± 0.68	1.09 ± 0.58	0.39 ± 0.35	1.02 ± 0.55	13.65 ± 10.25
Mar. 1972 - May 1972	0.61 ± 0.41	2.33 ± 1.21	0.44 ± 0.40	0.27 ± 0.24	23.71 ± 17.38
Mean for all Determinations ± S.D.	0.59 ± 0.45	1.60 ± 1.11	0.42 ± 0.42	0.38 ± 0.36	16.35 ± 14.45

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