

Fish Tissue Mercury in 2005 South River, South Fork Shenandoah River, and Shenandoah River

Fish were collected at 17 stations in spring of 2005 for the South River mercury project. The Division of Consolidated Laboratory Services (DCLS) performed total mercury analysis on single fillets taken from each fish. Target fish species and alternates for trophic groups were smallmouth bass or largemouth bass for predators, redbreast sunfish or rock bass for grazers, and white suckers, redhorse or hogsuckers for bottom feeders. We collected the primary target species at most sites. Smallmouth bass were collected at all but three sites, white suckers were collected at all but three sites, and redbreast sunfish were collected at all of our sites. The total mercury levels are similar to past years. Mercury in fish remained elevated in the entire system below the DuPont footbridge. The levels are highest in the South River and lower in South Fork Shenandoah River below the confluence with North River.

In addition to the trophic groups, we collected trout at two stations in the South River to verify that levels are low enough to exempt them from the consumption advisory. Trout that were marked at the hatchery were collected after six months of exposure in the river. They were all at the lower detection level. We also collected channel catfish at three stations since they are consumed by anglers more frequently. Most were at about the same level as redbreast sunfish. However there was one very large individual that was above 3 ppm (parts per million) for total mercury at Whitehouse Landing, an area at which most fish were below 1 ppm.

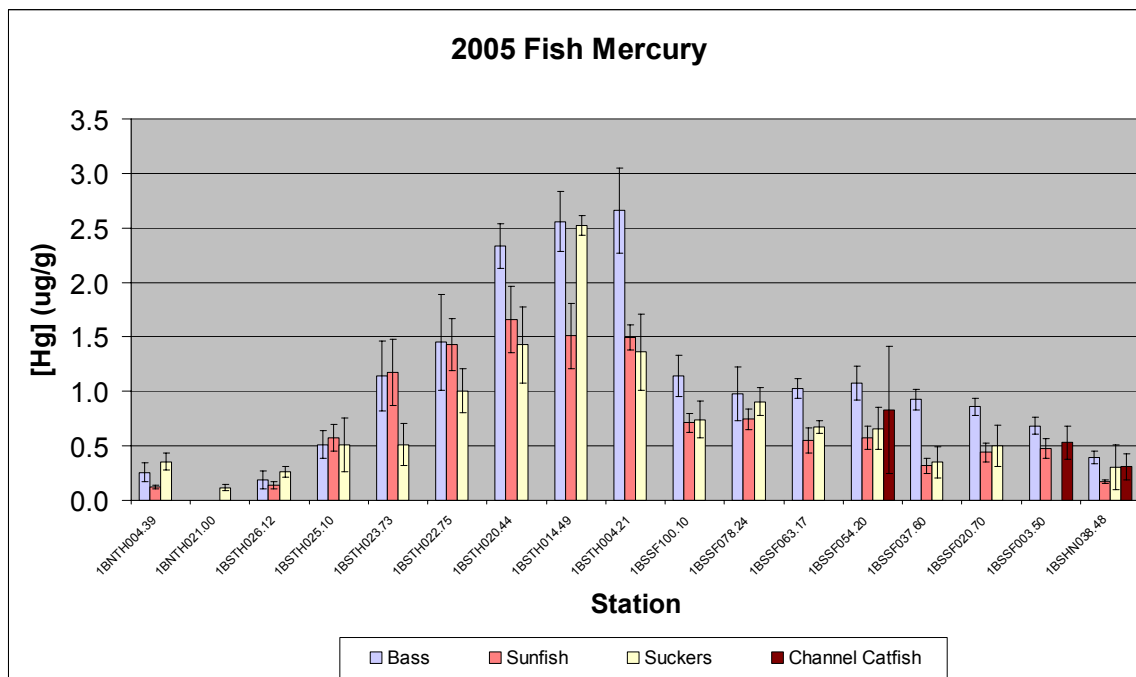


Fig. 1 – Average scores and 95% confidence limits for trophic groups and channel catfish at each station

The tables that follow show results for all of the fish collected for total mercury analysis in the 2005 South River mercury project. Values highlighted in tan were at the method detection limit. Based on results from past studies, methyl mercury was estimated at 90% of the total mercury. Estimated methyl mercury values that were above the action level of 0.5 ppm are highlighted in red.

1BNTH021.00 - North River below Wildwood Park Dam in Bridgewater (control)

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
White Sucker	04/19/05	40.5	721	0.10	
White Sucker	04/19/05	41.8	1026	0.10	
White Sucker	04/19/05	40.0	821	0.10	
White Sucker	04/19/05	49.7	1445	0.12	
White Sucker	04/19/05	38.8	936	0.11	
White Sucker	04/19/05	39.2	761	0.10	
White Sucker	04/19/05	48.8	1217	0.23	
White Sucker	04/19/05	32.1	495	0.10	
White Sucker	04/19/05	29.1	371	0.10	
Average Total Mercury (ppm)				0.12	0.11

1BNTH004.39 - North River near Rt. 668 (control)

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/19/05	17.0	104	0.10	
Redbreast Sunfish	04/19/05	16.1	74	0.12	
Redbreast Sunfish	04/19/05	15.0	70	0.15	
Redbreast Sunfish	04/19/05	17.8	115	0.10	
Redbreast Sunfish	04/19/05	16.3	74	0.14	
Redbreast Sunfish	04/19/05	16.7	92	0.18	
Redbreast Sunfish	04/19/05	16.7	102	0.10	
Redbreast Sunfish	04/19/05	16.1	94	0.12	
Redbreast Sunfish	04/19/05	15.6	87	0.12	
Average Total Mercury (ppm)				0.13	0.12
Smallmouth Bass	04/19/05	29.6	341	0.29	
Smallmouth Bass	04/19/05	25.4	191	0.21	
Smallmouth Bass	04/19/05	31.4	387	0.46	
Smallmouth Bass	04/19/05	24.8	197	0.47	
Smallmouth Bass	04/19/05	22.2	147	0.17	
Smallmouth Bass	04/19/05	20.2	90	0.14	
Smallmouth Bass	04/19/05	22.9	147	0.26	
Smallmouth Bass	04/19/05	23.2	160	0.19	
Smallmouth Bass	04/19/05	19.6	87	0.11	
Average Total Mercury (ppm)				0.26	0.23
White Sucker	04/19/05	48.6	1527	0.47	
White Sucker	04/19/05	52.7	1877	0.23	
White Sucker	04/19/05	48.0	1290	0.31	
White Sucker	04/19/05	46.5	1230	0.16	
White Sucker	04/19/05	50.2	1587	0.30	
White Sucker	04/19/05	49.9	1557	0.51	
White Sucker	04/19/05	49.3	1570	0.51	
White Sucker	04/19/05	48.4	1587	0.36	
White Sucker	04/19/05	48.4	1667	0.35	
Average Total Mercury (ppm)				0.36	0.32

1BSTH026.12 - South River above Rife Loth Dam in Waynesboro (control)

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	05/02/05	16.1	94	0.10	
Redbreast Sunfish	05/02/05	15.3	78	0.10	
Redbreast Sunfish	05/02/05	15.1	74	0.10	
Redbreast Sunfish	05/02/05	18.3	118	0.16	
Redbreast Sunfish	05/02/05	14.9	74	0.17	
Redbreast Sunfish	05/02/05	15.4	70	0.22	
Redbreast Sunfish	05/02/05	14.4	58	0.10	
Redbreast Sunfish	05/02/05	15.7	86	0.22	
Redbreast Sunfish	05/02/05	13.3	48	0.10	
Average Total Mercury (ppm)				0.14	0.13
Smallmouth Bass	05/02/05	31.6	414	0.38	
Smallmouth Bass	05/02/05	22.8	150	0.22	
Smallmouth Bass	05/02/05	20.0	96	0.13	
Smallmouth Bass	05/02/05	19.3	98	0.20	
Smallmouth Bass	05/02/05	17.4	76	0.11	
Smallmouth Bass	05/02/05	18.7	82	0.11	
Average Total Mercury (ppm)				0.19	0.34
White Sucker	04/04/05	49.0	1452	0.31	
White Sucker	04/04/05	47.4	1304	0.17	
White Sucker	04/04/05	49.2	1246	0.38	
White Sucker	04/04/05	48.0	1114	0.32	
White Sucker	04/04/05	47.3	1290	0.22	
White Sucker	04/04/05	43.2	928	0.19	
White Sucker	04/04/05	45.3	1026	0.21	
White Sucker	04/04/05	46.1	1080	0.25	
White Sucker	04/04/05	45.5	1000	0.32	
Average Total Mercury (ppm)				0.26	0.23

1BSTH025.10 - South River north of DuPont footbridge in Waynesboro

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/11/05	15.3	72	0.73	
Redbreast Sunfish	04/11/05	15.0	62	0.70	
Redbreast Sunfish	04/11/05	13.7	46	0.40	
Redbreast Sunfish	04/11/05	14.5	65	0.54	
Redbreast Sunfish	04/11/05	14.5	71	0.70	
Redbreast Sunfish	04/11/05	17.3	102	0.89	
Redbreast Sunfish	04/11/05	15.0	65	0.40	
Redbreast Sunfish	04/11/05	13.0	40	0.33	
Redbreast Sunfish	04/11/05	14.1	58	0.47	
Average Total Mercury (ppm)				0.57	0.51
Rainbow Trout	04/11/05	31.9	320	0.10	
Rainbow Trout	04/11/05	26.0	179	0.10	
Rainbow Trout	04/11/05	27.4	194	0.10	
Rainbow Trout	04/11/05	32.1	286	0.10	
Rainbow Trout	04/11/05	29.0	248	0.10	
Rainbow Trout	04/11/05	27.4	190	0.10	
Rainbow Trout	04/11/05	29.2	253	0.10	
Rainbow Trout	04/11/05	28.2	212	0.10	
Average Total Mercury (ppm)				0.10	0.09
Smallmouth Bass	04/11/05	27.1	302	0.58	
Smallmouth Bass	04/11/05	28.6	341	0.85	
Smallmouth Bass	04/11/05	22.7	190	0.37	
Smallmouth Bass	04/11/05	22.5	168	0.54	
Smallmouth Bass	04/11/05	25.4	230	0.77	
Smallmouth Bass	04/11/05	19.5	98	0.38	
Smallmouth Bass	04/11/05	18.3	86	0.30	
Smallmouth Bass	04/11/05	22.6	152	0.47	
Smallmouth Bass	04/11/05	18.2	80	0.34	
Average Total Mercury (ppm)				0.51	0.46
White Sucker	04/11/05	45.0	1027	0.67	
White Sucker	04/11/05	44.8	1006	0.45	
White Sucker	04/11/05	42.5	1132	0.10	
White Sucker	04/11/05	43.0	902	0.14	
White Sucker	04/11/05	44.1	1209	0.96	
White Sucker	04/11/05	40.0	779	1.09	
White Sucker	04/11/05	38.4	677	0.75	
White Sucker	04/11/05	37.1	628	0.25	
White Sucker	04/11/05	38.9	617	0.17	
Average Total Mercury (ppm)				0.51	0.46

1BSTH023.73 - South River at 2nd Street in Waynesboro

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/11/05	16.0	88	1.34	
Redbreast Sunfish	04/11/05	16.1	76	1.10	
Redbreast Sunfish	04/11/05	17.9	114	0.83	
Redbreast Sunfish	04/11/05	15.6	71	0.90	
Redbreast Sunfish	04/11/05	15.3	71	1.11	
Redbreast Sunfish	04/11/05	15.5	73	0.85	
Redbreast Sunfish	04/11/05	14.4	60	2.32	
Redbreast Sunfish	04/11/05	14.0	48	0.89	
Redbreast Sunfish	04/11/05	15.2	70	1.21	
Average Total Mercury (ppm)				1.17	1.05
Smallmouth Bass	05/02/05	26.0	250	0.65	
Smallmouth Bass	05/02/05	25.5	226	0.97	
Smallmouth Bass	05/02/05	22.2	154	1.75	
Smallmouth Bass	05/02/05	22.0	148	0.81	
Smallmouth Bass	05/02/05	29.0	320	1.02	
Smallmouth Bass	05/02/05	24.6	210	1.30	
Smallmouth Bass	05/02/05	27.6	270	0.54	
Smallmouth Bass	05/02/05	25.0	212	2.02	
Smallmouth Bass	05/02/05	30.0	394	1.19	
Average Total Mercury (ppm)				1.14	1.03
White Sucker	04/11/05	45.0	1062	0.72	
White Sucker	04/11/05	40.2	868	0.14	
White Sucker	04/11/05	39.5	665	0.46	
White Sucker	04/11/05	43.4	1083	1.12	
White Sucker	05/02/05	46.4	1298	0.66	
White Sucker	05/02/05	38.1	680	0.40	
White Sucker	05/02/05	42.0	982	0.35	
White Sucker	05/02/05	38.1	758	0.25	
White Sucker	05/02/05	39.9	740	0.52	
Average Total Mercury (ppm)				0.51	0.46

1BSTH022.75 - South River at Hopeman Parkway in Waynesboro

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/04/05	19.8	132	1.45	
Redbreast Sunfish	04/04/05	18.4	122	1.38	
Redbreast Sunfish	04/04/05	15.6	74	1.84	
Redbreast Sunfish	04/04/05	17.2	96	1.41	
Redbreast Sunfish	04/04/05	14.8	66	1.08	
Average Total Mercury (ppm)				1.43	1.29
Smallmouth Bass	04/04/05	32.2	500	2.05	
Smallmouth Bass	04/04/05	25.0	234	0.91	
Smallmouth Bass	04/04/05	25.6	248	1.01	
Smallmouth Bass	04/04/05	22.8	130	1.56	
Smallmouth Bass	04/04/05	27.3	280	2.15	
Smallmouth Bass	04/04/05	16.1	48	1.03	
Average Total Mercury (ppm)				1.45	1.31
White Sucker	04/04/05	48.5	1220	1.17	
White Sucker	04/04/05	49.2	1568	0.79	
White Sucker	04/04/05	46.4	1492	1.09	
White Sucker	04/04/05	45.3	1140	1.14	
White Sucker	04/04/05	45.1	972	1.58	
White Sucker	04/04/05	39.0	744	0.91	
White Sucker	04/04/05	47.5	1540	1.14	
White Sucker	04/04/05	46.0	1340	0.64	
White Sucker	04/04/05	47.9	1228	0.58	
Average Total Mercury (ppm)				1.00	0.90

1BSTH020.44 - South River at Rt. 611 in Doods

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Largemouth Bass	04/13/05	22.2	141	2.49	
Largemouth Bass	04/13/05	22.4	152	2.21	
Largemouth Bass	04/13/05	23.3	166	2.33	
Largemouth Bass	04/13/05	27.2	273	2.76	
Largemouth Bass	04/13/05	29.0	377	2.10	
Largemouth Bass	04/13/05	19.5	100	2.69	
Largemouth Bass	04/13/05	18.2	82	1.84	
Largemouth Bass	04/13/05	23.6	161	2.03	
Largemouth Bass	04/13/05	29.5	322	2.56	
Average Total Mercury (ppm)				2.33	2.10
Redbreast Sunfish	04/13/05	19.0	148	1.85	
Redbreast Sunfish	04/13/05	17.2	102	1.35	
Redbreast Sunfish	04/13/05	15.9	99	0.98	
Redbreast Sunfish	04/13/05	16.2	81	2.27	
Redbreast Sunfish	04/13/05	15.1	69	1.88	
Redbreast Sunfish	04/13/05	15.2	63	2.37	
Redbreast Sunfish	04/13/05	19.2	141	1.21	
Redbreast Sunfish	04/13/05	16.2	83	1.48	
Redbreast Sunfish	04/13/05	16.0	69	1.54	
Average Total Mercury (ppm)				1.66	1.49
White Sucker	04/13/05	43.7	953	1.24	
White Sucker	04/13/05	44.9	1665	1.58	
White Sucker	04/13/05	44.4	1165	0.38	
White Sucker	04/13/05	44.7	1086	1.94	
White Sucker	04/13/05	40.9	947	1.54	
White Sucker	04/13/05	42.8	1111	1.75	
White Sucker	04/13/05	46.0	1201	1.89	
White Sucker	04/13/05	43.7	1217	1.75	
White Sucker	04/13/05	38.4	658	0.78	
Average Total Mercury (ppm)				1.43	1.29

1BSTH014.49 - South River at VDOF farm near Crimora

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/08/05	16.5	94	1.37	
Redbreast Sunfish	04/08/05	15.0	72	1.40	
Redbreast Sunfish	04/08/05	16.5	106	1.17	
Redbreast Sunfish	04/08/05	17.3	118	1.03	
Redbreast Sunfish	04/08/05	16.6	82	2.60	
Redbreast Sunfish	04/08/05	16.9	108	1.78	
Redbreast Sunfish	04/08/05	19.1	156	1.43	
Redbreast Sunfish	04/08/05	17.0	118	1.33	
Redbreast Sunfish	04/08/05	16.3	98	1.47	
Average Total Mercury (ppm)				1.51	1.36
Smallmouth Bass	04/08/05	21.2	148	3.00	
Smallmouth Bass	04/08/05	34.0	610	2.63	
Smallmouth Bass	04/08/05	22.3	140	2.78	
Smallmouth Bass	04/08/05	28.6	310	3.22	
Smallmouth Bass	04/08/05	33.6	642	1.89	
Smallmouth Bass	04/08/05	21.0	138	2.64	
Smallmouth Bass	04/08/05	20.6	138	2.11	
Smallmouth Bass	04/08/05	20.2	96	2.28	
Smallmouth Bass	04/08/05	19.3	80	2.48	
Average Total Mercury (ppm)				2.56	2.30
White Sucker	04/08/05	48.7	1242	2.39	
White Sucker	04/08/05	46.9	1216	2.34	
White Sucker	04/08/05	46.3	1408	2.59	
White Sucker	04/08/05	48.5	1498	2.78	
White Sucker	04/08/05	46.2	1530	2.59	
White Sucker	04/08/05	46.7	1058	2.60	
White Sucker	04/08/05	49.1	1576	2.55	
White Sucker	04/08/05	48.0	1262	2.42	
White Sucker	04/08/05	48.1	1294	2.46	
Average Total Mercury (ppm)				2.52	2.27

1BSTH004.21 - South River near Grand Caverns Bridge in Grottoes

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Largemouth Bass	04/13/05	45.5	1772	3.31	
Largemouth Bass	04/13/05	38.1	1004	3.37	
Largemouth Bass	04/13/05	28.1	331	2.38	
Largemouth Bass	04/13/05	23.4	168	2.70	
Largemouth Bass	04/13/05	26.4	231	2.46	
Largemouth Bass	04/13/05	24.9	193	2.52	
Largemouth Bass	04/13/05	19.5	92	1.87	
Average Total Mercury (ppm)				2.66	2.39
Redbreast Sunfish	04/13/05	16.2	77	1.43	
Redbreast Sunfish	04/13/05	18.0	110	1.41	
Redbreast Sunfish	04/13/05	16.5	97	1.35	
Redbreast Sunfish	04/13/05	18.5	134	1.32	
Redbreast Sunfish	04/13/05	18.5	129	1.35	
Redbreast Sunfish	04/13/05	17.1	97	1.52	
Redbreast Sunfish	04/13/05	16.8	93	1.69	
Redbreast Sunfish	04/13/05	13.1	45	1.84	
Redbreast Sunfish	04/13/05	13.0	44	1.57	
Average Total Mercury (ppm)				1.50	1.35
Rainbow Trout	04/13/05	28.2	237	0.10	
Rainbow Trout	04/13/05	23.1	161	0.10	
Rainbow Trout	04/13/05	29.9	304	0.10	
Rainbow Trout	04/13/05	27.5	253	0.10	
Rainbow Trout	04/13/05	32.2	361	0.10	
Rainbow Trout	04/13/05	28.2	229	0.10	
Rainbow Trout	04/13/05	29.3	256	0.10	
Rainbow Trout	04/13/05	29.5	285	0.10	
Rainbow Trout	04/13/05	30.3	283	0.10	
Average Total Mercury (ppm)				0.10	0.09
White Sucker	04/13/05	47.0	1585	1.75	
White Sucker	04/13/05	47.1	1304	0.83	
White Sucker	04/13/05	43.9	1070	0.92	
White Sucker	04/13/05	44.0	980	1.54	
White Sucker	04/13/05	43.8	961	1.41	
White Sucker	04/13/05	49.7	1810	0.95	
White Sucker	04/13/05	47.6	1551	2.23	
White Sucker	04/13/05	51.4	1747	1.90	
White Sucker	04/13/05	48.3	1433	0.71	
Average Total Mercury (ppm)				1.36	1.22

1BSSF100.10 – South Fork Shenandoah River at Rt. 708 near Lynwood

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/15/05	18.4	136	0.58	
Redbreast Sunfish	04/15/05	17.2	98	0.67	
Redbreast Sunfish	04/15/05	15.6	76	0.82	
Redbreast Sunfish	04/15/05	15.2	64	0.84	
Redbreast Sunfish	04/15/05	17.2	98	0.68	
Redbreast Sunfish	04/15/05	14.2	50	0.62	
Redbreast Sunfish	04/15/05	15.1	66	0.79	
Redbreast Sunfish	04/15/05	13.2	50	0.91	
Redbreast Sunfish	04/15/05	13.6	48	0.49	
Average Total Mercury (ppm)				0.71	0.64
Smallmouth Bass	04/15/05	39.8	720	1.65	
Smallmouth Bass	04/15/05	27.5	308	1.27	
Smallmouth Bass	04/15/05	27.3	274	0.56	
Smallmouth Bass	04/15/05	28.5	306	1.31	
Smallmouth Bass	04/15/05	24.5	164	1.15	
Smallmouth Bass	04/15/05	25.4	206	1.15	
Smallmouth Bass	04/15/05	26.0	222	1.11	
Smallmouth Bass	04/15/05	25.2	200	0.99	
Smallmouth Bass	04/15/05	25.6	192	1.07	
Average Total Mercury (ppm)				1.14	1.03
White Sucker	04/15/05	49.0	1460	0.71	
White Sucker	04/15/05	51.3	1624	0.75	
White Sucker	04/15/05	42.5	940	0.50	
White Sucker	04/15/05	48.1	1596	0.66	
White Sucker	04/15/05	50.1	1706	0.84	
White Sucker	04/15/05	50.2	1758	1.16	
White Sucker	04/15/05	49.4	1620	0.92	
White Sucker	04/15/05	50.3	1704	0.88	
White Sucker	04/15/05	30.8	412	0.26	
Average Total Mercury (ppm)				0.74	0.67

1BSSF078.24 – South Fork Shenandoah River above dam in Shenandoah

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/05/05	18.3	128	0.65	
Redbreast Sunfish	04/05/05	17.9	120	0.89	
Redbreast Sunfish	04/05/05	18.5	120	0.56	
Redbreast Sunfish	04/05/05	17.6	92	0.85	
Redbreast Sunfish	04/05/05	15.6	75	0.83	
Redbreast Sunfish	04/05/05	17.0	98	0.56	
Redbreast Sunfish	04/05/05	15.8	70	0.76	
Redbreast Sunfish	04/05/05	18.2	113	0.66	
Redbreast Sunfish	04/05/05	16.7	94	0.96	
Average Total Mercury (ppm)				0.75	0.68
Smallmouth Bass	04/05/05	46.3	1281	1.03	
Smallmouth Bass	04/05/05	36.7	681	0.55	
Smallmouth Bass	04/05/05	34.1	528	1.43	
Smallmouth Bass	04/05/05	28.2	300	0.90	
Smallmouth Bass	04/05/05	25.7	238	0.75	
Smallmouth Bass	04/05/05	28.0	250	1.46	
Smallmouth Bass	04/05/05	29.2	320	0.38	
Smallmouth Bass	04/05/05	27.0	260	1.23	
Smallmouth Bass	04/05/05	26.4	235	1.07	
Average Total Mercury (ppm)				0.98	0.88
White Sucker	04/05/05	52.1	1885	0.86	
White Sucker	04/05/05	48.8	1518	1.03	
White Sucker	04/05/05	49.4	1920	1.00	
White Sucker	04/05/05	48.5	1560	0.76	
White Sucker	04/05/05	50.3	1674	0.76	
White Sucker	04/05/05	52.0	1761	1.08	
White Sucker	04/05/05	45.5	1457	1.21	
White Sucker	04/05/05	46.8	1489	0.57	
White Sucker	04/05/05	48.4	1425	0.87	
Average Total Mercury (ppm)				0.90	0.81

1BSSF063.17 – South Fork Shenandoah River at Newport Landing

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/06/05	19.6	154	0.82	
Redbreast Sunfish	04/06/05	18.1	118	0.45	
Redbreast Sunfish	04/06/05	18.0	128	0.35	
Redbreast Sunfish	04/06/05	16.1	82	0.71	
Redbreast Sunfish	04/06/05	17.3	104	0.56	
Redbreast Sunfish	04/06/05	17.8	114	0.41	
Redbreast Sunfish	04/06/05	15.5	78	0.80	
Redbreast Sunfish	04/06/05	15.0	64	0.43	
Redbreast Sunfish	04/06/05	14.1	54	0.43	
Average Total Mercury (ppm)				0.55	0.50
Smallmouth Bass	04/06/05	28.0	244	1.08	
Smallmouth Bass	04/06/05	29.1	304	1.32	
Smallmouth Bass	04/06/05	29.6	318	1.00	
Smallmouth Bass	04/06/05	27.5	274	0.98	
Smallmouth Bass	04/06/05	27.3	242	1.15	
Smallmouth Bass	04/06/05	25.8	202	1.01	
Smallmouth Bass	04/06/05	24.3	187	0.85	
Smallmouth Bass	04/06/05	25.0	200	0.93	
Smallmouth Bass	04/06/05	24.8	190	0.94	
Average Total Mercury (ppm)				1.03	0.93
Shorthead Redhorse	04/06/05	54.6	2412	0.62	
Shorthead Redhorse	04/06/05	52.1	2056	0.74	
Shorthead Redhorse	04/06/05	50.1	1816	0.51	
Shorthead Redhorse	04/06/05	50.2	1908	0.63	
Shorthead Redhorse	04/06/05	50.0	1886	0.76	
Shorthead Redhorse	04/06/05	49.2	1886	0.69	
Shorthead Redhorse	04/06/05	52.1	2112	0.79	
Shorthead Redhorse	04/06/05	50.6	1836	0.74	
Shorthead Redhorse	04/06/05	49.0	1750	0.59	
Average Total Mercury (ppm)				0.67	0.60

1BSSF054.20 – South Fork Shenandoah River at Rt. 211 near Hamburg

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Channel Catfish	04/08/05	76.5	5557	3.04	
Channel Catfish	04/08/05	73.0	4961	1.22	
Channel Catfish	04/08/05	66.2	3005	0.34	
Channel Catfish	04/08/05	62.5	2268	0.90	
Channel Catfish	04/08/05	65.3	2098	0.70	
Channel Catfish	04/08/05	58.0	1837	0.35	
Channel Catfish	04/08/05	53.5	1426	0.24	
Channel Catfish	04/08/05	46.8	915	0.39	
Channel Catfish	04/08/05	44.9	850	0.29	
Average Total Mercury (ppm)				0.83	0.75
Redbreast Sunfish	04/08/05	19.5	141	0.84	
Redbreast Sunfish	04/08/05	19.7	171	0.44	
Redbreast Sunfish	04/08/05	18.6	127	0.69	
Redbreast Sunfish	04/08/05	18.9	127	0.54	
Redbreast Sunfish	04/08/05	18.4	123	0.81	
Redbreast Sunfish	04/08/05	18.4	131	0.54	
Redbreast Sunfish	04/08/05	15.0	66	0.39	
Redbreast Sunfish	04/08/05	18.0	104	0.49	
Redbreast Sunfish	04/08/05	17.1	107	0.43	
Average Total Mercury (ppm)				0.57	0.51
Smallmouth Bass	04/08/05	32.2	521	1.43	
Smallmouth Bass	04/08/05	26.0	214	0.73	
Smallmouth Bass	04/08/05	25.5	192	0.99	
Smallmouth Bass	04/08/05	24.8	189	0.79	
Smallmouth Bass	04/08/05	28.9	311	1.21	
Smallmouth Bass	04/08/05	28.4	314	1.12	
Smallmouth Bass	04/08/05	27.0	236	1.21	
Smallmouth Bass	04/08/05	23.6	161	0.90	
Smallmouth Bass	04/08/05	25.9	192	1.30	
Average Total Mercury (ppm)				1.08	0.97
White Sucker	04/08/05	50.1	1422	0.72	
White Sucker	04/08/05	50.8	1877	0.79	
White Sucker	04/08/05	27.8	258	0.47	
Average Total Mercury (ppm)				0.66	0.59

1BSSF037.60 – South Fork Shenandoah River at Fosters Landing

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Largemouth Bass	05/31/05	44.0	1290	1.19	
Largemouth Bass	05/31/05	39.8	896	1.03	
Largemouth Bass	05/31/05	38.1	896	0.97	
Largemouth Bass	05/31/05	33.7	584	0.83	
Largemouth Bass	05/31/05	33.0	560	0.79	
Largemouth Bass	05/31/05	32.9	504	0.73	
Largemouth Bass	05/31/05	32.5	550	1.01	
Largemouth Bass	05/31/05	27.4	296	0.78	
Largemouth Bass	05/31/05	25.5	258	0.99	
Average Total Mercury (ppm)				0.92	0.83
Redbreast Sunfish	05/31/05	20.2	216	0.27	
Redbreast Sunfish	05/31/05	20.0	184	0.35	
Redbreast Sunfish	05/31/05	20.7	204	0.40	
Redbreast Sunfish	05/31/05	18.1	142	0.55	
Redbreast Sunfish	05/31/05	17.3	120	0.18	
Redbreast Sunfish	05/31/05	13.9	68	0.24	
Redbreast Sunfish	05/31/05	15.9	86	0.32	
Redbreast Sunfish	05/31/05	14.2	62	0.29	
Redbreast Sunfish	05/31/05	14.0	60	0.25	
Average Total Mercury (ppm)				0.32	0.29
White Sucker	05/31/05	46.0	1218	0.38	
White Sucker	05/31/05	39.5	878	0.51	
White Sucker	05/31/05	39.2	831	0.24	
White Sucker	05/31/05	43.0	1145	0.40	
White Sucker	05/31/05	37.5	702	0.14	
White Sucker	05/31/05	46.5	1222	0.66	
White Sucker	05/31/05	33.5	420	0.13	
Average Total Mercury (ppm)				0.35	0.32

1BSSF020.70 – South Fork Shenandoah River at Bentonville Landing

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Northern Hogsucker	04/14/05	37.0	621	0.33	
Northern Hogsucker	04/14/05	41.5	1035	0.78	
Northern Hogsucker	04/14/05	37.0	599	0.79	
Northern Hogsucker	04/14/05	32.0	377	0.30	
Northern Hogsucker	04/14/05	32.5	472	0.74	
Northern Hogsucker	04/14/05	27.6	286	0.26	
Northern Hogsucker	04/14/05	26.6	209	0.21	
Northern Hogsucker	04/14/05	29.8	315	0.20	
Northern Hogsucker	04/14/05	29.9	322	0.91	
Average Total Mercury (ppm)				0.50	0.45
Redbreast Sunfish	04/14/05	19.1	132	0.53	
Redbreast Sunfish	04/14/05	16.6	94	0.52	
Redbreast Sunfish	04/14/05	17.5	114	0.46	
Redbreast Sunfish	04/14/05	16.5	96	0.36	
Redbreast Sunfish	04/14/05	18.1	129	0.54	
Redbreast Sunfish	04/14/05	17.5	110	0.65	
Redbreast Sunfish	04/14/05	14.5	64	0.37	
Redbreast Sunfish	04/14/05	11.5	31	0.21	
Redbreast Sunfish	04/14/05	18.7	160	0.33	
Average Total Mercury (ppm)				0.44	0.40
Smallmouth Bass	04/14/05	39.4	987	1.05	
Smallmouth Bass	04/14/05	32.3	580	0.77	
Smallmouth Bass	04/14/05	28.5	347	1.03	
Smallmouth Bass	04/14/05	32.1	531	0.94	
Smallmouth Bass	04/14/05	30.1	443	0.77	
Smallmouth Bass	04/14/05	28.8	371	0.86	
Smallmouth Bass	04/14/05	28.0	289	0.70	
Smallmouth Bass	04/14/05	29.0	385	0.79	
Smallmouth Bass	04/14/05	29.8	428	0.83	
Average Total Mercury (ppm)				0.86	0.77

1BSSF003.50 – South Fork Shenandoah River at Luray Avenue in Front Royal

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Channel Catfish	04/14/05	59.8	2670	0.59	
Channel Catfish	04/14/05	68.2	3840	0.51	
Channel Catfish	04/14/05	73.4	5250	0.75	
Channel Catfish	04/14/05	67.5	3822	0.24	
Channel Catfish	04/14/05	61.4	3056	0.28	
Channel Catfish	04/14/05	59.1	2450	0.69	
Channel Catfish	04/14/05	54.0	1394	0.92	
Channel Catfish	04/14/05	49.4	1236	0.52	
Channel Catfish	04/14/05	46.5	1072	0.30	
Average Total Mercury (ppm)				0.53	0.48
Redbreast Sunfish	04/14/05	20.1	174	0.37	
Redbreast Sunfish	04/14/05	18.4	128	0.45	
Redbreast Sunfish	04/14/05	16.8	96	0.47	
Redbreast Sunfish	04/14/05	18.8	128	0.73	
Redbreast Sunfish	04/14/05	16.7	100	0.41	
Redbreast Sunfish	04/14/05	17.2	100	0.49	
Redbreast Sunfish	04/14/05	16.8	90	0.66	
Redbreast Sunfish	04/14/05	15.7	74	0.36	
Redbreast Sunfish	04/14/05	16.0	90	0.34	
Average Total Mercury (ppm)				0.48	0.43
Smallmouth Bass	04/14/05	35.5	536	0.48	
Smallmouth Bass	04/14/05	30.0	308	0.87	
Smallmouth Bass	04/14/05	30.5	385	0.81	
Smallmouth Bass	04/14/05	29.2	344	0.71	
Smallmouth Bass	04/14/05	28.4	318	0.62	
Smallmouth Bass	04/14/05	30.0	344	0.76	
Smallmouth Bass	04/14/05	26.0	232	0.69	
Smallmouth Bass	04/14/05	25.1	206	0.63	
Smallmouth Bass	04/14/05	24.2	184	0.59	
Average Total Mercury (ppm)				0.68	0.61

1BSHN038.48 - Shenandoah River at Rt. 17/50

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Channel Catfish	05/24/05	47.2	1274	0.16	
Channel Catfish	05/24/05	59.0	2640	0.42	
Channel Catfish	05/24/05	44.0	891	0.17	
Channel Catfish	05/24/05	43.0	782	0.25	
Channel Catfish	05/24/05	33.2	290	0.13	
Channel Catfish	05/24/05	50.0	1258	0.34	
Channel Catfish	05/24/05	35.0	374	0.17	
Channel Catfish	05/24/05	50.1	1334	0.67	
Channel Catfish	05/24/05	52.6	1598	0.48	
Average Total Mercury (ppm)				0.31	0.28
Redbreast Sunfish	05/24/05	18.1	150	0.17	
Redbreast Sunfish	05/24/05	17.5	127	0.17	
Redbreast Sunfish	05/24/05	15.4	86	0.21	
Redbreast Sunfish	05/24/05	17.4	120	0.13	
Redbreast Sunfish	05/24/05	17.2	137	0.14	
Redbreast Sunfish	05/24/05	15.5	87	0.18	
Redbreast Sunfish	05/24/05	16.5	107	0.21	
Redbreast Sunfish	05/24/05	17.0	117	0.17	
Redbreast Sunfish	05/24/05	15.8	92	0.19	
Average Total Mercury (ppm)				0.17	0.15
Smallmouth Bass	05/24/05	30.8	401	0.25	
Smallmouth Bass	05/24/05	38.5	321	0.33	
Smallmouth Bass	05/24/05	25.6	211	0.52	
Smallmouth Bass	05/24/05	28.6	327	0.34	
Smallmouth Bass	05/24/05	27.0	280	0.50	
Smallmouth Bass	05/24/05	31.2	407	0.42	
Smallmouth Bass	05/24/05	27.3	260	0.37	
Smallmouth Bass	05/24/05	27.7	287	0.39	
Smallmouth Bass	05/24/05	27.3	280	0.43	
Average Total Mercury (ppm)				0.39	0.35
White Sucker	05/24/05	47.1	1314	0.38	
White Sucker	05/24/05	48.6	1538	0.44	
White Sucker	05/24/05	32.0	460	0.10	
Average Total Mercury (ppm)				0.31	0.28