

Fish Tissue Mercury in 2007 South River, South Fork Shenandoah River, and Shenandoah River

Fish were collected at 18 stations in spring of 2007 for the South River mercury project. The Division of Consolidated Laboratory Services (DCLS) performed total mercury analysis on the single fillets taken from each fish. Target species and alternates for trophic groups were smallmouth bass for predators, redbreast sunfish for grazers, and white suckers, redhorse or hogsuckers for bottom feeders. We collected smallmouth and one of the bottom feeders at all sites, however grazers were not always present and some sites we could not collect the targeted number of fish. This was most likely due to previous fish kills and perhaps time of year. The total mercury numbers are similar to previous years, but elevated compared to 2005. Mercury in fish remained elevated in the entire system below the DuPont footbridge. The levels are highest in the South River and lower in the South Fork Shenandoah River below the confluence with North River.

In addition to trophic groups, we collected trout at two stations in the South River to verify that levels were low enough to exempt them from the consumption advisory. They were all below the 0.5 ppm action level. We also collected channel catfish at three stations since they are consumed by anglers more frequently. At the first two up river sites, all the catfish were above 0.5 ppm. At the last station, 4 out of 10 catfish collected were above 0.5 ppm.

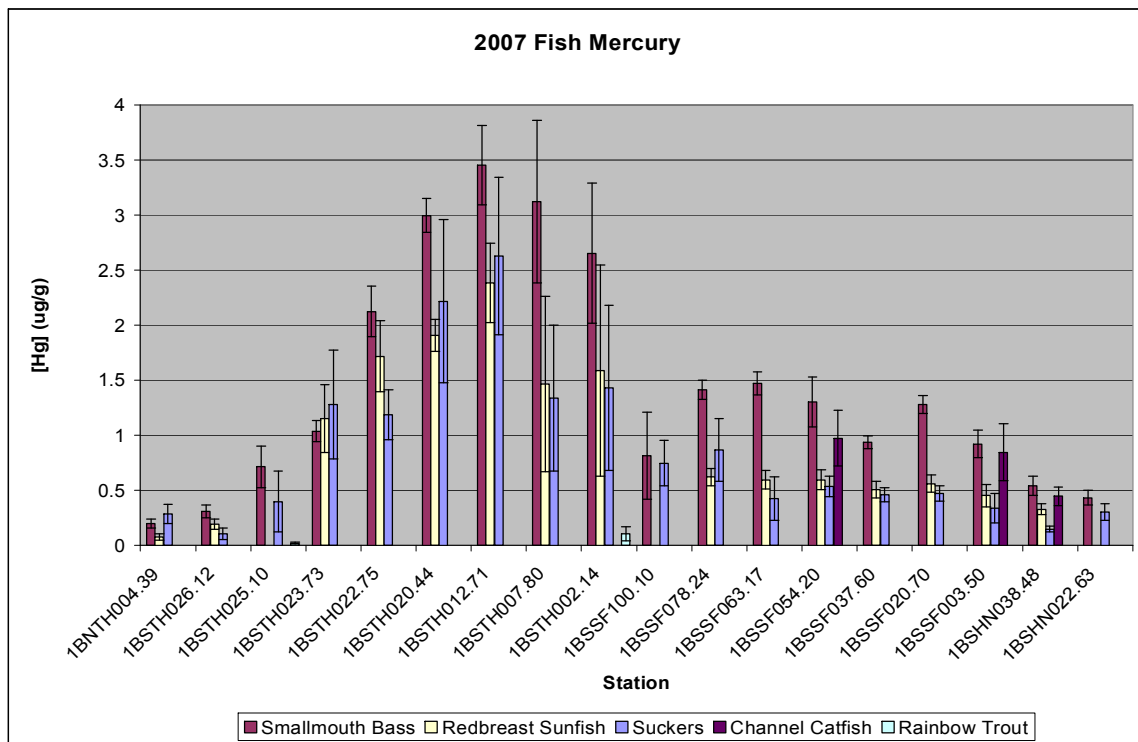


Fig. 1 – Average scores and 95% confidence limits for trophic groups and channel catfish and rainbow trout.

The tables that follow show results for all of the fish collected for total mercury analysis in the 2007 South River mercury project. 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.

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/03/07	31.5	426	0.200	
Smallmouth Bass	04/03/07	27.5	238	0.240	
Smallmouth Bass	04/03/07	28.0	276	0.190	
Smallmouth Bass	04/03/07	21.0	86	0.130	
Smallmouth Bass	04/03/07	27.0	235	0.240	
Smallmouth Bass	04/03/07	24.0	196	0.210	
Smallmouth Bass	04/03/07	26.0	216	0.260	
Smallmouth Bass	04/03/07	23.0	130	0.110	
Smallmouth Bass	04/03/07	20.0	73	0.100	
Smallmouth Bass	04/03/07	19.0	69	0.300	
Average Total Mercury (ppm)				0.198	0.178
Redbreast Sunfish	04/03/07	10.0	18	0.120	
Redbreast Sunfish	04/03/07	13.0	31	0.070	
Redbreast Sunfish	04/03/07	15.0	63	0.060	
Redbreast Sunfish	04/03/07	16.0	90	0.060	
Average Total Mercury (ppm)				0.078	0.07
White Sucker	04/03/07	51.0	1912	0.500	
White Sucker	04/03/07	48.0	1351	0.080	
White Sucker	04/03/07	45.5	1174	0.260	
White Sucker	04/03/07	43.0	923	0.440	
White Sucker	04/03/07	38.0	575	0.360	
White Sucker	04/03/07	40.0	758	0.080	
White Sucker	04/03/07	46.0	1187	0.200	
White Sucker	04/03/07	41.0	859	0.390	
White Sucker	04/03/07	44.0	1030	0.260	
White Sucker	04/03/07	35.0	592	0.300	
Average Total Mercury (ppm)				0.287	0.258

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/10/07	27.4	301	0.160	
Smallmouth Bass	04/10/07	29.2	310	0.380	
Smallmouth Bass	04/10/07	26.9	273	0.260	
Smallmouth Bass	04/10/07	22.8	154	0.200	
Smallmouth Bass	04/10/07	28.5	239	0.340	
Smallmouth Bass	04/10/07	30.8	404	0.320	
Smallmouth Bass	04/10/07	25.0	207	0.460	
Smallmouth Bass	04/10/07	28.8	333	0.340	
Smallmouth Bass	04/10/07	23.5	173	0.250	
Smallmouth Bass	04/10/07	33.6	547	0.390	
Average Total Mercury				0.310	0.279
Redbreast Sunfish	04/10/07	19.0	153	0.200	
Redbreast Sunfish	04/10/07	18.0	126	0.130	
Redbreast Sunfish	04/10/07	17.3	95	0.280	
Redbreast Sunfish	04/10/07	18.0	121	0.140	
Redbreast Sunfish	04/10/07	17.5	102	0.130	
Redbreast Sunfish	04/10/07	18.2	113	0.220	
Redbreast Sunfish	04/10/07	18.0	118	0.190	
Redbreast Sunfish	04/10/07	17.3	91	0.120	
Redbreast Sunfish	04/10/07	15.0	55	0.160	
Redbreast Sunfish	04/10/07	17.0	88	0.350	
Average Total Mercury				0.192	0.173
White Sucker	04/10/07	19.5	88	0.050	
White Sucker	04/10/07	43.8	937	0.110	
White Sucker	04/10/07	46.2	1234	0.180	
White Sucker	04/10/07	49.1	1304	0.330	
White Sucker	04/10/07	27.2	249	0.050	
White Sucker	04/10/07	20.6	110	0.060	
White Sucker	04/10/07	23.2	136	0.070	
White Sucker	04/10/07	20.6	101	0.060	
White Sucker	04/10/07	17.0	52	0.080	
White Sucker	04/10/07	20.0	85	0.080	
Average Total Mercury				0.107	0.0963

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Rainbow Trout	04/10/07	27.3	193	0.010	
Rainbow Trout	04/10/07	33.0	391	0.040	
Rainbow Trout	04/10/07	28.6	197	0.040	
Rainbow Trout	04/10/07	27.0	208	0.020	
Rainbow Trout	04/10/07	29.9	291	0.010	
Rainbow Trout	04/10/07	27.6	152	0.040	
Rainbow Trout	04/10/07	29.5	260	0.010	
Rainbow Trout	04/10/07	30.8	295	0.010	
Rainbow Trout	04/10/07	28.8	255	0.010	
Rainbow Trout	04/10/07	30.0	289	0.020	
Average Total Mercury				0.021	0.019
Smallmouth Bass	04/10/07	22.0	149	1.440	
Smallmouth Bass	04/10/07	18.1	74	0.450	
Smallmouth Bass	04/10/07	22.5	166	0.720	
Smallmouth Bass	04/10/07	25.5	236	0.680	
Smallmouth Bass	04/10/07	26.8	281	0.460	
Smallmouth Bass	04/10/07	24.0	200	0.610	
Smallmouth Bass	04/10/07	26.6	261	0.490	
Smallmouth Bass	04/10/07	24.0	188	0.660	
Smallmouth Bass	04/10/07	21.4	127	0.610	
Smallmouth Bass	04/10/07	21.6	132	1.030	
Average Total Mercury				0.715	0.644
White Sucker	04/10/07	40.5	717	0.380	
White Sucker	04/10/07	40.5	766	1.590	
White Sucker	04/10/07	44.4	848	0.260	
White Sucker	04/10/07	40.3	756	0.100	
White Sucker	04/10/07	43.2	1145	0.190	
White Sucker	04/10/07	27.7	256	0.120	
White Sucker	04/10/07	40.8	726	0.420	
White Sucker	04/10/07	35.0	499	0.110	
White Sucker	04/10/07	34.5	491	0.290	
White Sucker	04/10/07	44.0	1128	0.540	
Average Total Mercury				0.400	0.36

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Redbreast Sunfish	04/10/07	17.0	94	1.460	
Redbreast Sunfish	04/10/07	16.0	18	0.950	
Redbreast Sunfish	04/10/07	15.0	64	1.050	
Average Total Mercury				1.153	1.038
Smallmouth Bass	04/10/07	32.0	447	1.050	
Smallmouth Bass	04/10/07	30.0	301	1.120	
Smallmouth Bass	04/10/07	27.0	250	0.850	
Smallmouth Bass	04/10/07	27.0	254	1.110	
Smallmouth Bass	04/10/07	26.0	224	1.190	
Smallmouth Bass	04/10/07	22.0	129	1.340	
Smallmouth Bass	04/10/07	46.0	1228	0.930	
Smallmouth Bass	04/10/07	22.0	134	0.900	
Smallmouth Bass	04/10/07	21.0	103	0.980	
Smallmouth Bass	04/10/07	22.0	130	0.910	
Average Total Mercury				1.038	0.934
White Sucker	04/10/07	43.0	1010	0.610	
White Sucker	04/10/07	40.0	753	0.630	
White Sucker	04/10/07	46.0	1280	3.080	
White Sucker	04/10/07	47.0	1254	0.830	
White Sucker	04/10/07	50.0	1144	1.020	
White Sucker	04/10/07	40.0	535	0.840	
White Sucker	04/10/07	46.0	1228	1.160	
White Sucker	04/10/07	37.0	580	2.080	
White Sucker	04/10/07	37.0	717	1.780	
White Sucker	04/10/07	48.0	1405	0.760	
Average Total Mercury				1.279	1.15

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/03/07	29.0	303	2.510	
Smallmouth Bass	04/03/07	29.0	362	2.410	
Smallmouth Bass	04/03/07	27.0	278	2.060	
Smallmouth Bass	04/03/07	27.0	223	1.920	
Smallmouth Bass	04/03/07	28.0	292	1.820	
Smallmouth Bass	04/03/07	28.0	278	2.000	
Smallmouth Bass	04/03/07	26.0	216	1.790	
Smallmouth Bass	04/03/07	20.0	109	2.690	
Smallmouth Bass	04/03/07	23.0	136	1.570	
Smallmouth Bass	04/03/07	22.0	137	2.490	
Average Total Mercury				2.126	1.193
Redbreast Sunfish	04/03/07	18.0	111	1.390	
Redbreast Sunfish	04/03/07	16.0	74	1.650	
Redbreast Sunfish	04/03/07	16.0	81	1.200	
Redbreast Sunfish	04/03/07	15.0	65	2.330	
Redbreast Sunfish	04/03/07	15.0	62	2.620	
Redbreast Sunfish	04/03/07	16.0	64	1.850	
Redbreast Sunfish	04/03/07	16.0	76	2.110	
Redbreast Sunfish	04/03/07	15.0	57	1.790	
Redbreast Sunfish	04/03/07	13.0	36	1.040	
Redbreast Sunfish	04/03/07	11.5	23	1.200	
Average Total Mercury				1.718	1.546
White Sucker	04/03/07	35.0	477	1.460	
White Sucker	04/03/07	39.0	661	1.730	
White Sucker	04/03/07	38.0	594	0.820	
White Sucker	04/03/07	51.0	1419	1.210	
White Sucker	04/03/07	35.0	429	1.630	
White Sucker	04/03/07	35.0	403	1.430	
White Sucker	04/03/07	29.5	302	1.020	
White Sucker	04/03/07	26.0	170	1.070	
White Sucker	04/03/07	20.5	111	0.840	
White Sucker	04/03/07	17.0	66	0.670	
Average Total Mercury				1.188	1.069

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/02/07	34.0	467	2.730	
Smallmouth Bass	04/02/07	27.0	282	3.300	
Smallmouth Bass	04/02/07	32.5	542	2.860	
Smallmouth Bass	04/02/07	27.0	295	3.300	
Smallmouth Bass	04/02/07	25.0	211	2.910	
Smallmouth Bass	04/02/07	26.5	215	3.220	
Smallmouth Bass	04/02/07	24.0	170	2.690	
Smallmouth Bass	04/02/07	26.0	230	2.810	
Smallmouth Bass	04/02/07	25.0	189	3.270	
Smallmouth Bass	04/02/07	26.0	196	2.880	
Average Total Mercury (ppm)				2.997	2.697
Redbreast Sunfish	04/02/07	16.0	79	1.950	
Redbreast Sunfish	04/02/07	18.0	120	1.640	
Redbreast Sunfish	04/02/07	17.0	93	1.990	
Redbreast Sunfish	04/02/07	20.0	142	1.910	
Redbreast Sunfish	04/02/07	16.0	81	2.060	
Redbreast Sunfish	04/02/07	15.5	80	1.730	
Redbreast Sunfish	04/02/07	15.0	60	2.050	
Redbreast Sunfish	04/02/07	16.5	83	1.650	
Redbreast Sunfish	04/02/07	17.0	88	1.700	
Redbreast Sunfish	04/02/07	15.5	67	2.380	
Average Total Mercury (ppm)				1.906	1.715
White Sucker	04/02/07	35.0	525	2.030	
White Sucker	04/02/07	34.5	491	1.450	
White Sucker	04/02/07	43.5	1104	1.860	
White Sucker	04/02/07	46.0	1284	2.830	
White Sucker	04/02/07	50.0	1350	3.230	
White Sucker	04/02/07	47.0	1282	3.430	
White Sucker	04/02/07	51.0	1770	2.860	
White Sucker	04/02/07	41.0	860	0.730	
White Sucker	04/02/07	47.0	1199	3.670	
White Sucker	04/02/07	36.0	507	0.094	
Average Total Mercury (ppm)				2.218	2

1BSTH012.71 - South River at VDOF Forestry Center near Crimora

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/02/07	26.0	236	3.520	
Smallmouth Bass	04/02/07	28.0	261	3.390	
Smallmouth Bass	04/02/07	29.0	279	2.790	
Smallmouth Bass	04/02/07	28.0	241	4.650	
Smallmouth Bass	04/02/07	24.0	169	3.040	
Smallmouth Bass	04/02/07	24.0	183	2.890	
Smallmouth Bass	04/02/07	23.0	122	3.240	
Smallmouth Bass	04/02/07	29.5	320	3.500	
Smallmouth Bass	04/02/07	26.0	224	3.280	
Smallmouth Bass	04/02/07	30.0	377	4.220	
Average Total Mercury (ppm)				3.452	3.107
Redbreast Sunfish	04/02/07	17.5	106	2.410	
Redbreast Sunfish	04/02/07	16.0	79	2.970	
Redbreast Sunfish	04/02/07	16.0	75	2.330	
Redbreast Sunfish	04/02/07	17.5	97	2.880	
Redbreast Sunfish	04/02/07	15.5	66	2.510	
Redbreast Sunfish	04/02/07	16.0	70	2.660	
Redbreast Sunfish	04/02/07	15.0	68	3.140	
Redbreast Sunfish	04/02/07	16.0	85	1.950	
Redbreast Sunfish	04/02/07	12.0	40	1.340	
Redbreast Sunfish	04/02/07	13.0	46	1.660	
Average Total Mercury (ppm)				2.385	2.147
White Sucker	04/02/07	50.0	1535	3.840	
White Sucker	04/02/07	45.5	970	3.290	
White Sucker	04/02/07	48.5	1177	3.510	
White Sucker	04/02/07	39.0	626	1.890	
White Sucker	04/02/07	50.0	1428	3.890	
White Sucker	04/02/07	40.0	904	1.980	
White Sucker	04/02/07	40.5	918	3.070	
White Sucker	04/02/07	52.0	1680	2.850	
White Sucker	04/02/07	41.0	993	1.710	
White Sucker	04/02/07	28.0	290	0.260	
Average Total Mercury (ppm)				2.629	2.366

1BSTH007.80 - South River at Patterson Mill Road in Harriston

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
White Sucker	04/02/07	48.5	1315	2.610	
White Sucker	04/02/07	42.0	945	0.630	
White Sucker	04/02/07	45.0	1166	0.940	
White Sucker	04/02/07	45.0	1125	1.980	
White Sucker	04/02/07	39.0	758	0.270	
White Sucker	04/02/07	50.5	1524	2.900	
White Sucker	04/02/07	50.0	1668	0.620	
White Sucker	04/02/07	49.5	1554	2.630	
White Sucker	04/02/07	33.0	510	0.160	
White Sucker	04/02/07	42.0	870	0.650	
Average Total Mercury (ppm)				1.339	1.205
Smallmouth Bass	04/02/07	31.0	368	1.310	
Smallmouth Bass	04/02/07	24.0	143	3.640	
Smallmouth Bass	04/02/07	26.0	227	3.690	
Smallmouth Bass	04/02/07	24.0	186	3.430	
Smallmouth Bass	04/02/07	26.0	217	3.640	
Smallmouth Bass	04/02/07	23.5	155	3.020	
Average Total Mercury (ppm)				3.122	2.81
Redbreast Sunfish	04/02/07	17.0	91	1.820	
Redbreast Sunfish	04/02/07	16.5	71	2.700	
Redbreast Sunfish	04/02/07	14.0	51	0.210	
Redbreast Sunfish	04/02/07	13.5	44	1.310	
Redbreast Sunfish	04/02/07	13.0	33	1.290	
Average Total Mercury (ppm)				1.466	1.32

1BSTH002.14 - Town Park in Grottoes

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
White Sucker	04/02/07	51.0	1550	3.130	
White Sucker	04/02/07	49.0	1222	1.230	
White Sucker	04/02/07	32.0	435	0.960	
White Sucker	04/02/07	29.0	297	0.220	
White Sucker	04/02/07	23.0	174	0.910	
White Sucker	04/02/07	50.0	1508	3.040	
White Sucker	04/02/07	49.5	1667	1.160	
White Sucker	04/02/07	50.0	1482	3.120	
White Sucker	04/02/07	48.0	1581	0.310	
White Sucker	04/02/07	31.5	373	0.230	
Average Total Mercury (ppm)				1.431	1.29
Rainbow Trout	04/02/07	34.0	50	0.380	
Rainbow Trout	04/02/07	33.0	455	0.120	
Rainbow Trout	04/02/07	29.0	259	0.066	
Rainbow Trout	04/02/07	31.0	412	0.088	
Rainbow Trout	04/02/07	27.0	212	0.037	
Rainbow Trout	04/02/07	29.0	247	0.084	
Rainbow Trout	04/02/07	29.0	293	0.060	
Rainbow Trout	04/02/07	28.0	277	0.100	
Rainbow Trout	04/02/07	29.0	315	0.086	
Rainbow Trout	04/02/07	30.5	305	0.039	
Average Total Mercury (ppm)				0.106	0.095
Smallmouth Bass	04/02/07	19.5	85	2.480	
Smallmouth Bass	04/02/07	30.0	374	1.430	
Smallmouth Bass	04/02/07	33.0	450	1.060	
Smallmouth Bass	04/02/07	28.0	473	3.890	
Smallmouth Bass	04/02/07	27.0	233	1.500	
Smallmouth Bass	04/02/07	28.0	252	3.000	
Smallmouth Bass	04/02/07	24.0	150	3.500	
Smallmouth Bass	04/02/07	26.0	184	3.070	
Smallmouth Bass	04/02/07	20.0	85	3.910	
Smallmouth Bass	04/02/07	19.5	72	2.690	
Average Total Mercury (ppm)				2.653	2.39
Redbreast Sunfish	04/02/07	17.0	85	2.720	
Redbreast Sunfish	04/02/07	17.5	84	2.000	
Redbreast Sunfish	04/02/07	14.0	52	0.480	
Redbreast Sunfish	04/02/07	15.5	68	1.160	
Average Total Mercury (ppm)				1.590	1.431

1BSSF100.10 - South Fork Shenandoah River at Rt. 708 near Lynnwood

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/03/07	27.5	262	0.340	
Smallmouth Bass	04/03/07	27.5	239	0.340	
Smallmouth Bass	04/03/07	30.0	332	1.690	
Smallmouth Bass	04/03/07	28.0	258	1.330	
Smallmouth Bass	04/03/07	27.0	220	0.360	
Smallmouth Bass	04/03/07	25.5	170	1.190	
Smallmouth Bass	04/03/07	25.0	173	0.200	
Smallmouth Bass	04/03/07	27.0	241	1.060	
Average Total Mercury (ppm)				0.814	0.733
White Sucker	04/03/07	42.0	1000	0.610	
White Sucker	04/03/07	39.0	734	0.460	
White Sucker	04/03/07	51.0	1733	1.240	
White Sucker	04/03/07	51.0	1959	1.150	
White Sucker	04/03/07	43.0	1132	0.600	
White Sucker	04/03/07	50.0	1412	1.090	
White Sucker	04/03/07	48.0	1340	1.020	
White Sucker	04/03/07	29.0	334	0.440	
White Sucker	04/03/07	27.0	261	0.450	
White Sucker	04/03/07	26.0	237	0.420	
Average Total Mercury (ppm)				0.748	0.659

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/03/07	28.0	260	1.420	
Smallmouth Bass	04/03/07	27.0	220	1.250	
Smallmouth Bass	04/03/07	32.0	286	1.290	
Smallmouth Bass	04/03/07	25.0	196	1.380	
Smallmouth Bass	04/03/07	27.0	250	1.370	
Smallmouth Bass	04/03/07	26.0	197	1.350	
Smallmouth Bass	04/03/07	30.0	310	1.380	
Smallmouth Bass	04/03/07	27.0	207	1.720	
Smallmouth Bass	04/03/07	26.0	205	1.580	
Smallmouth Bass	04/03/07	25.0	178	1.410	
Average Total Mercury (ppm)				1.415	1.274
Redbreast Sunfish	04/03/07	14.0	54	0.540	
Redbreast Sunfish	04/03/07	16.0	72	0.580	
Redbreast Sunfish	04/03/07	16.5	83	0.490	
Redbreast Sunfish	04/03/07	16.0	84	0.690	
Redbreast Sunfish	04/03/07	15.0	51	0.760	
Redbreast Sunfish	04/03/07	17.0	86	0.790	
Redbreast Sunfish	04/03/07	17.0	97	0.450	
Redbreast Sunfish	04/03/07	15.0	61	0.770	
Redbreast Sunfish	04/03/07	16.0	78	0.650	
Redbreast Sunfish	04/03/07	16.0	72	0.500	
Average Total Mercury (ppm)				0.622	0.56
White Sucker	04/03/07	42.0	1162	0.880	
White Sucker	04/03/07	41.0	876	0.890	
White Sucker	04/03/07	51.0	1602	1.410	
White Sucker	04/03/07	45.0	1022	1.190	
White Sucker	04/03/07	50.0	1650	1.370	
White Sucker	04/03/07	35.0	608	0.370	
White Sucker	04/03/07	32.0	440	0.310	
White Sucker	04/03/07	38.0	800	0.360	
White Sucker	04/03/07	50.0	1472	1.030	
Average Total Mercury (ppm)				0.868	0.781

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	03/26/07	28.3	289	1.310	
Smallmouth Bass	03/26/07	26.5	207	1.280	
Smallmouth Bass	03/26/07	25.0	180	1.240	
Smallmouth Bass	03/26/07	25.0	190	1.660	
Smallmouth Bass	03/26/07	26.0	264	1.570	
Smallmouth Bass	03/26/07	28.0	370	1.700	
Smallmouth Bass	03/26/07	23.0	158	1.430	
Smallmouth Bass	03/26/07	28.5	291	1.520	
Smallmouth Bass	03/26/07	26.0	238	1.630	
Smallmouth Bass	03/26/07	25.0	198	1.390	
Average Total Mercury (ppm)				1.473	1.326
White Sucker	03/26/07	30.9	495	0.370	
White Sucker	03/26/07	31.6	404	0.310	
White Sucker	03/26/07	30.0	348	0.340	
White Sucker	03/26/07	26.8	233	0.350	
White Sucker	03/26/07	34.5	527	0.340	
White Sucker	03/26/07	40.4	810	0.440	
White Sucker	03/26/07	47.4	1679	1.320	
White Sucker	03/26/07	39.7	701	0.280	
White Sucker	03/26/07	29.6	332	0.240	
White Sucker	03/26/07	31.1	367	0.270	
Average Total Mercury (ppm)				0.426	0.383
Redbreast Sunfish	03/26/07	18.5	127	0.500	
Redbreast Sunfish	03/26/07	16.3	85	0.550	
Redbreast Sunfish	03/26/07	17.5	125	0.410	
Redbreast Sunfish	03/26/07	16.0	80	0.640	
Redbreast Sunfish	03/26/07	14.0	58	0.640	
Redbreast Sunfish	03/26/07	15.3	73	0.910	
Redbreast Sunfish	03/26/07	15.0	75	0.690	
Redbreast Sunfish	03/26/07	14.0	57	0.510	
Redbreast Sunfish	03/26/07	14.4	60	0.500	
Redbreast Sunfish	03/26/07	15.0	67	0.630	
Average Total Mercury (ppm)				0.598	0.538

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	03/26/07	23.8	146	1.350	
Smallmouth Bass	03/26/07	24.1	186	1.630	
Smallmouth Bass	03/26/07	26.1	199	1.230	
Smallmouth Bass	03/26/07	25.7	209	1.360	
Smallmouth Bass	03/26/07	26.0	221	1.210	
Smallmouth Bass	03/26/07	32.5	453	1.290	
Smallmouth Bass	03/26/07	37.8	723	1.680	
Smallmouth Bass	03/26/07	24.8	170	1.220	
Smallmouth Bass	03/26/07	36.1	669	1.660	
Smallmouth Bass	03/26/07	33.0	501	0.420	
Average Total Mercury (ppm)				1.305	1.175
Channel Catfish	03/26/07	59.0	2195	0.970	
Channel Catfish	03/26/07	70.0	3855	0.750	
Channel Catfish	03/26/07	57.0	2016	1.090	
Channel Catfish	03/26/07	57.0	1950	0.520	
Channel Catfish	03/26/07	63.0	3130	1.120	
Channel Catfish	03/26/07	68.0	3670	1.270	
Channel Catfish	03/26/07	62.0	3150	0.910	
Channel Catfish	03/26/07	71.0	4536	1.900	
Channel Catfish	03/26/07	45.0	920	0.580	
Channel Catfish	03/26/07	51.0	1230	0.640	
Average Total Mercury (ppm)				0.975	0.878
Northern Hogsucker	03/26/07	27.0	249	0.360	
Northern Hogsucker	03/26/07	32.5	391	0.540	
Northern Hogsucker	03/26/07	34.0	487	0.370	
Northern Hogsucker	03/26/07	33.5	423	0.770	
Northern Hogsucker	03/26/07	33.0	427	0.410	
Northern Hogsucker	03/26/07	38.5	776	0.490	
Northern Hogsucker	03/26/07	38.5	739	0.630	
Northern Hogsucker	03/26/07	40.0	859	0.400	
Northern Hogsucker	03/26/07	41.0	920	0.680	
Northern Hogsucker	03/26/07	39.0	857	0.720	
Average Total Mercury (ppm)				0.537	0.483
Redbreast Sunfish	03/26/07	190.0	125	0.680	
Redbreast Sunfish	03/26/07	140.0	49	0.830	
Redbreast Sunfish	03/26/07	140.0	45	0.820	
Redbreast Sunfish	03/26/07	171.0	99	0.580	
Redbreast Sunfish	03/26/07	168.0	86	0.410	
Redbreast Sunfish	03/26/07	172.0	112	0.500	
Redbreast Sunfish	03/26/07	182.0	104	0.500	
Redbreast Sunfish	03/26/07	148.0	59	0.520	
Redbreast Sunfish	03/26/07	177.0	104	0.650	
Redbreast Sunfish	03/26/07	150.0	60	0.480	
Average Total Mercury (ppm)				0.597	0.537

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	04/04/07	26.0	175	0.930	
Smallmouth Bass	04/04/07	23.0	114	0.890	
Smallmouth Bass	04/04/07	29.0	324	0.870	
Smallmouth Bass	04/04/07	27.0	231	0.780	
Smallmouth Bass	04/04/07	25.0	284	1.080	
Smallmouth Bass	04/04/07	24.0	161	0.900	
Smallmouth Bass	04/04/07	25.0	165	0.870	
Smallmouth Bass	04/04/07	25.0	157	0.990	
Smallmouth Bass	04/04/07	22.0	124	0.990	
Smallmouth Bass	04/04/07	22.0	133	1.060	
Average Total Mercury (ppm)				0.936	0.842
Redbreast Sunfish	04/04/07	16.0	75	0.420	
Redbreast Sunfish	04/04/07	19.0	126	0.490	
Redbreast Sunfish	04/04/07	17.0	97	0.640	
Redbreast Sunfish	04/04/07	17.0	89	0.530	
Redbreast Sunfish	04/04/07	16.0	60	0.620	
Redbreast Sunfish	04/04/07	15.0	65	0.300	
Redbreast Sunfish	04/04/07	15.0	65	0.640	
Redbreast Sunfish	04/04/07	16.0	82	0.410	
Redbreast Sunfish	04/04/07	14.0	50	0.610	
Redbreast Sunfish	04/04/07	15.0	66	0.410	
Average Total Mercury (ppm)				0.507	0.456
Northern Hogsucker	04/04/07	35.0	557	0.340	
Northern Hogsucker	04/04/07	30.0	380	0.500	
Northern Hogsucker	04/04/07	29.0	373	0.290	
Northern Hogsucker	04/04/07	34.0	574	0.350	
Northern Hogsucker	04/04/07	31.0	340	0.480	
Northern Hogsucker	04/04/07	37.0	729	0.450	
Northern Hogsucker	04/04/07	38.0	670	0.530	
Northern Hogsucker	04/04/07	31.0	370	0.610	
Northern Hogsucker	04/04/07	35.0	615	0.540	
Northern Hogsucker	04/04/07	30.0	329	0.530	
Average Total Mercury (ppm)				0.462	0.416

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Northern Hogsucker	04/04/07	34.0	480	0.390	
Northern Hogsucker	04/04/07	30.0	303	0.450	
Northern Hogsucker	04/04/07	29.0	345	0.450	
Northern Hogsucker	04/04/07	31.0	423	0.670	
Northern Hogsucker	04/04/07	28.0	267	0.350	
Northern Hogsucker	04/04/07	38.0	688	0.510	
Northern Hogsucker	04/04/07	35.0	567	0.410	
Northern Hogsucker	04/04/07	31.0	386	0.600	
Northern Hogsucker	04/04/07	38.0	647	0.560	
Northern Hogsucker	04/04/07	23.0	142	0.340	
Average Total Mercury (ppm)				0.473	0.426
Smallmouth Bass	04/04/07	28.0	245	1.330	
Smallmouth Bass	04/04/07	27.0	209	1.450	
Smallmouth Bass	04/04/07	26.0	190	1.450	
Smallmouth Bass	04/04/07	26.0	180	1.220	
Smallmouth Bass	04/04/07	23.0	155	1.300	
Smallmouth Bass	04/04/07	25.0	184	1.400	
Smallmouth Bass	04/04/07	25.0	180	1.170	
Smallmouth Bass	04/04/07	25.0	173	1.100	
Smallmouth Bass	04/04/07	23.0	148	1.280	
Smallmouth Bass	04/04/07	23.0	112	1.110	
Average Total Mercury (ppm)				1.281	1.153
Redbreast Sunfish	04/04/07	18.0	99	0.640	
Redbreast Sunfish	04/04/07	18.0	120	0.440	
Redbreast Sunfish	04/04/07	18.5	131	0.700	
Redbreast Sunfish	04/04/07	18.0	106	0.450	
Redbreast Sunfish	04/04/07	19.5	135	0.560	
Redbreast Sunfish	04/04/07	18.0	118	0.600	
Redbreast Sunfish	04/04/07	16.0	87	0.680	
Redbreast Sunfish	04/04/07	17.0	96	0.720	
Redbreast Sunfish	04/04/07	15.0	62	0.490	
Redbreast Sunfish	04/04/07	14.0	55	0.350	
Average Total Mercury (ppm)				0.563	0.507

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	04/04/07	61.0	2600	0.690	
Channel Catfish	04/04/07	51.0	2000	0.570	
Channel Catfish	04/04/07	63.0	2800	0.970	
Channel Catfish	04/04/07	66.0	3500	1.150	
Average Total Mercury (ppm)				0.845	0.761
Redbreast Sunfish	04/04/07	17.0	108	0.350	
Redbreast Sunfish	04/04/07	14.0	58	0.570	
Redbreast Sunfish	04/04/07	18.0	108	0.510	
Redbreast Sunfish	04/04/07	18.0	103	0.840	
Redbreast Sunfish	04/04/07	18.0	116	0.520	
Redbreast Sunfish	04/04/07	17.0	107	0.330	
Redbreast Sunfish	04/04/07	17.0	100	0.340	
Redbreast Sunfish	04/04/07	16.0	88	0.330	
Redbreast Sunfish	04/04/07	16.0	76	0.360	
Redbreast Sunfish	04/04/07	12.0	39	0.370	
Average Total Mercury (ppm)				0.715	0.644
Northern Hogsucker	04/04/07	43.0	1171	0.960	
Northern Hogsucker	04/04/07	30.0	412	0.290	
Northern Hogsucker	04/04/07	24.0	156	0.250	
Northern Hogsucker	04/04/07	25.0	188	0.310	
Northern Hogsucker	04/04/07	28.0	267	0.240	
Northern Hogsucker	04/04/07	28.0	272	0.240	
Northern Hogsucker	04/04/07	25.0	192	0.230	
Northern Hogsucker	04/04/07	29.0	314	0.270	
Northern Hogsucker	04/04/07	24.0	160	0.290	
Northern Hogsucker	04/04/07	30.0	305	0.310	
Average Total Mercury (ppm)				0.339	0.305
Smallmouth Bass	04/04/07	29.0	287	1.010	
Smallmouth Bass	04/04/07	32.0	370	1.120	
Smallmouth Bass	04/04/07	33.0	545	1.160	
Smallmouth Bass	04/04/07	23.0	128	0.530	
Smallmouth Bass	04/04/07	33.0	516	0.750	
Smallmouth Bass	04/04/07	27.0	268	0.820	
Smallmouth Bass	04/04/07	26.0	206	1.130	
Smallmouth Bass	04/04/07	32.0	429	0.790	
Smallmouth Bass	04/04/07	26.0	222	0.930	
Smallmouth Bass	04/04/07	27.0	234	0.990	
Average Total Mercury (ppm)				0.923	0.831

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

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Channel Catfish	03/28/07	46.0	943	0.390	
Channel Catfish	03/28/07	54.0	1571	0.240	
Channel Catfish	03/28/07	50.0	1438	0.420	
Channel Catfish	03/28/07	54.0	1288	0.300	
Channel Catfish	03/28/07	49.0	1277	0.530	
Channel Catfish	03/28/07	52.0	1274	0.650	
Channel Catfish	03/28/07	44.0	994	0.420	
Channel Catfish	03/28/07	54.0	1765	0.570	
Channel Catfish	03/28/07	56.0	1540	0.370	
Channel Catfish	03/28/07	50.0	1124	0.580	
Average Total Mercury (ppm)				0.447	0.402
White Sucker	03/28/07	41.0	740	0.220	
White Sucker	03/28/07	39.0	680	0.130	
White Sucker	03/28/07	36.0	593	0.150	
White Sucker	03/28/07	38.0	546	0.130	
White Sucker	03/28/07	39.0	636	0.200	
White Sucker	03/28/07	39.0	711	0.130	
White Sucker	03/28/07	38.0	616	0.150	
White Sucker	03/28/07	28.0	262	0.110	
White Sucker	03/28/07	25.0	206	0.100	
White Sucker	03/28/07	38.0	574	0.180	
Average Total Mercury (ppm)				0.150	0.135
Smallmouth Bass	03/28/07	36.5	823	0.450	
Smallmouth Bass	03/28/07	29.0	323	0.530	
Smallmouth Bass	03/28/07	40.8	946	0.680	
Smallmouth Bass	03/28/07	29.0	359	0.550	
Smallmouth Bass	03/28/07	44.2	1089	0.740	
Smallmouth Bass	03/28/07	43.2	1218	0.590	
Smallmouth Bass	03/28/07	28.9	349	0.490	
Smallmouth Bass	03/28/07	33.0	496	0.680	
Smallmouth Bass	03/28/07	35.2	682	0.410	
Smallmouth Bass	03/28/07	39.5	884	0.280	
Average Total Mercury (ppm)				0.540	0.486
Redbreast Sunfish	03/28/07	15.2	64	0.250	
Redbreast Sunfish	03/28/07	14.3	54	0.190	
Redbreast Sunfish	03/28/07	17.6	106	0.380	
Redbreast Sunfish	03/28/07	13.8	48	0.330	
Redbreast Sunfish	03/28/07	15.5	63	0.390	
Redbreast Sunfish	03/28/07	15.0	59	0.380	
Redbreast Sunfish	03/28/07	15.1	52	0.260	
Redbreast Sunfish	03/28/07	17.0	78	0.300	
Redbreast Sunfish	03/28/07	17.6	84	0.410	
Redbreast Sunfish	03/28/07	16.2	70	0.410	
Average Total Mercury (ppm)				0.330	0.297

1BSHN022.63 - Shenandoah River at Rt. 7

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	03/28/07	35.3	745	0.430	
Smallmouth Bass	03/28/07	25.4	588	0.510	
Smallmouth Bass	03/28/07	29.5	342	0.420	
Smallmouth Bass	03/28/07	43.0	1258	0.490	
Smallmouth Bass	03/28/07	34.2	610	0.320	
Average Total Mercury (ppm)				0.434	0.391
Shorthead Redhorse	03/28/07	50.0	1517	0.350	
Shorthead Redhorse	03/28/07	38.0	643	0.130	
Shorthead Redhorse	03/28/07	32.0	346	0.110	
Shorthead Redhorse	03/28/07	48.0	1189	0.430	
Shorthead Redhorse	03/28/07	40.0	814	0.160	
Shorthead Redhorse	03/28/07	48.0	1509	0.360	
Shorthead Redhorse	03/28/07	50.0	1619	0.390	
Shorthead Redhorse	03/28/07	55.0	2160	0.330	
Shorthead Redhorse	03/28/07	53.0	2200	0.390	
Shorthead Redhorse	03/28/07	54.0	2330	0.400	
Average Total Mercury (ppm)				0.305	0.275