

## Fish Tissue Mercury in 2017

### South River, South Fork Shenandoah River and Shenandoah River

Fish were collected at 16 stations in the spring of 2017 for the South River mercury monitoring project. The Division of Consolidated Laboratory Services (DCLS) performed total mercury analysis on the single fillets taken from each fish. Target species for trophic groups included the following: smallmouth bass for predators, redbreast sunfish for grazers, and white suckers for bottom feeders. Channel catfish were collected at 6 South Fork Shenandoah and Shenandoah River sites because they are a popular food fish. New this year was the addition of Walleye at one site on the Shenandoah River. Trout were not collected during this sampling. In past sampling events, trout results have always been below advisory levels and typically were below qualification limits. However, DuPont did analyze trout caught by DGIF in a separate sampling event and those trout were also below advisory levels. Target number of fish was 10 of each species per site; however we were not able to always achieve this goal. There were not substitutions of species this year.

Generally speaking, mercury levels are similar to previous years and follow similar patterns with concentrations increasing downstream of the DuPont footbridge, decreasing at the confluence of the South and North Rivers (South Fork Shenandoah) and then decreasing again at the confluence of the North Fork and South Fork Shenandoah Rivers (Shenandoah River).

A species added this year that has not been sampled in the past (but has been observed) is walleye. Walleye have been stocked in the Potomac River and have been stocked in the Shenandoah by DGIF. Stockings have increased since the last sampling in 2012 and the population is increasing. Walleye are a predator species, mainly feeding on other fish and highly sought after by anglers and prized for their flavor. Walleye can be found on the mainstem of the Shenandoah River from the Warren Power Dam downstream. Nine Walleye were collected from one site, 1BSHN038.48 (Rt. 17/50 bridge). Lengths ranged from 41 cm – 62 cm. Hg concentrations ranged from 0.536 ppm – 1.45 ppm and the average concentration was 0.908 ppm with a calculated MeHg concentration of 0.817 ppm. The current creel limit for walleye on the Shenandoah River is 5 fish per day, 18 inches (45.72 cm) and over. 4 out of the 9 fish collected were over 45.72 cm. and had Hg concentrations ranging from 0.779 ppm – 1.45 ppm. The average concentration of those four walleye was 1.257 ppm and the calculated MeHg concentration was 1.13 ppm.

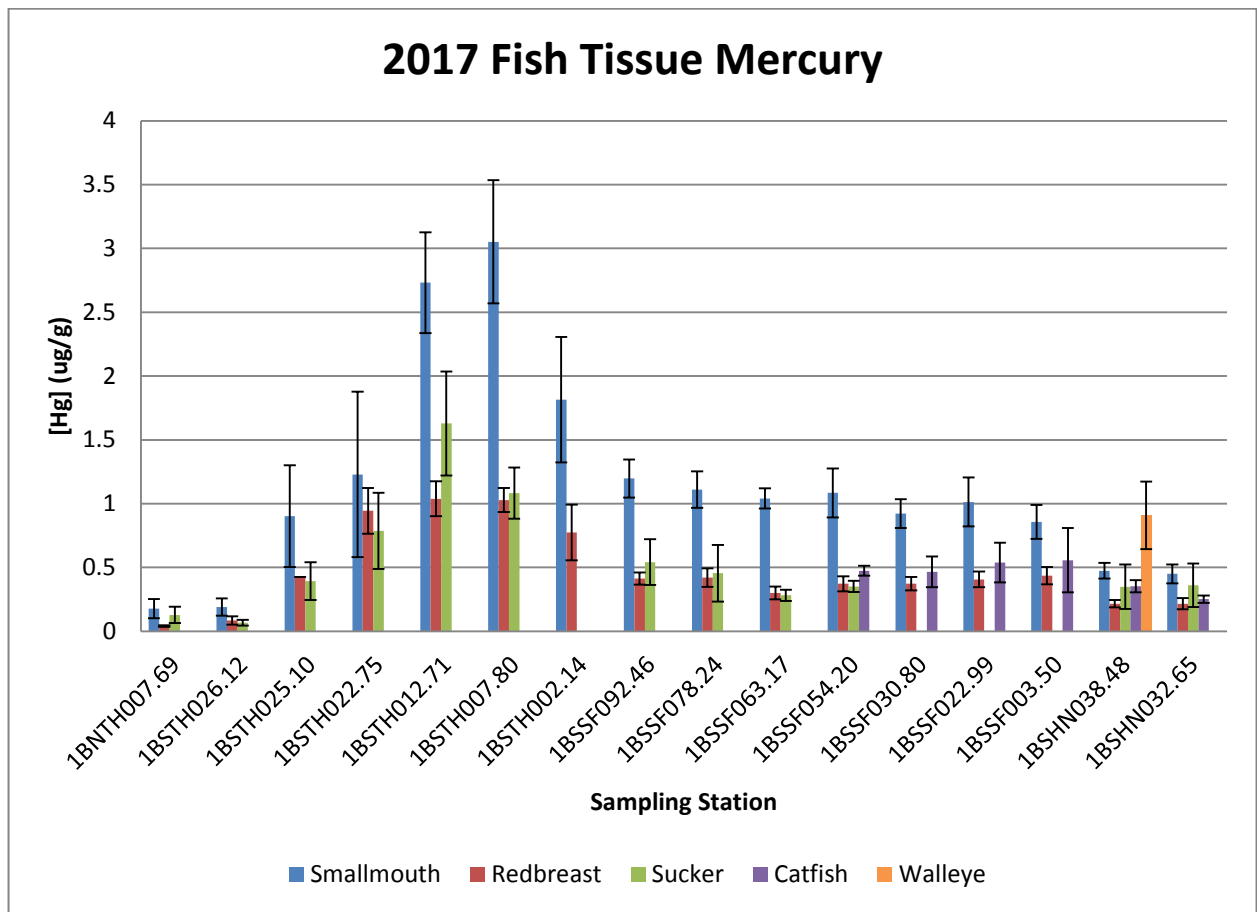


Fig. 1 – Average scores and 95% confidence limits for trophic groups and channel catfish and walleye.

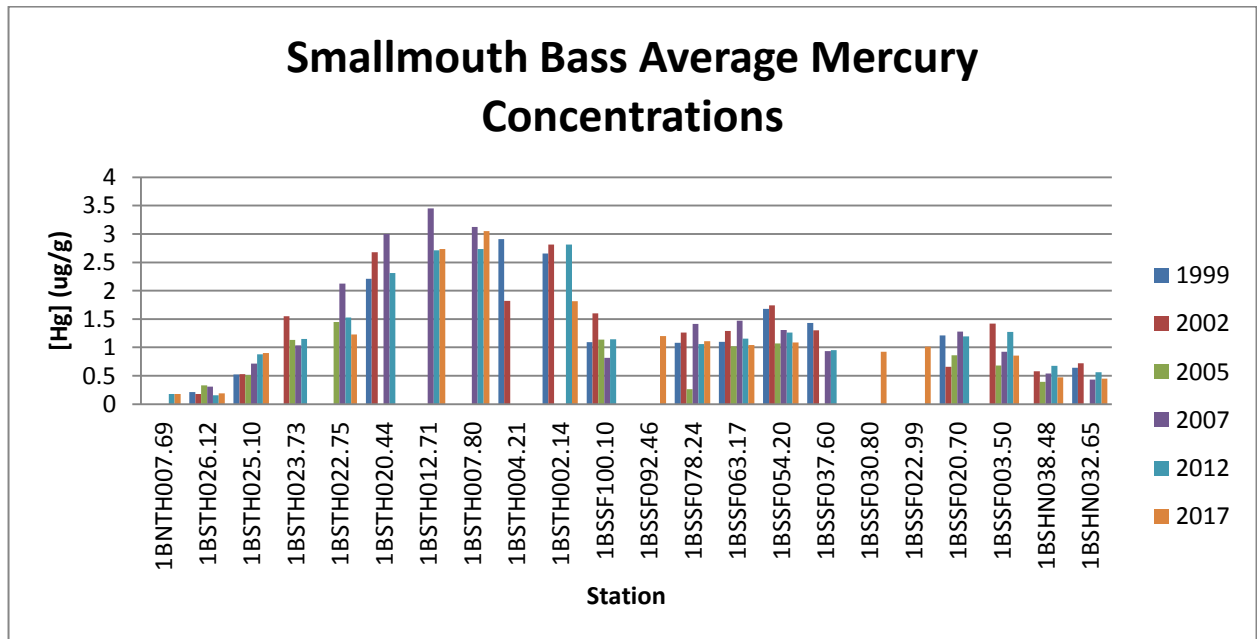


Fig. 2 – Average smallmouth bass mercury concentrations by station and year.

The tables that follow show results for all of the fish collected for total mercury analysis in the 2017 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.

**1BNT007.60 – North River near Rt. Keezletown Rd (control)**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/19/2017	22.3	130	0.087	
Smallmouth Bass	5/19/2017	21.7	126	0.136	
Smallmouth Bass	5/19/2017	21.9	148	0.173	
Smallmouth Bass	5/19/2017	21.8	123	0.082	
Smallmouth Bass	5/19/2017	25.7	216	0.513	
Smallmouth Bass	5/19/2017	25.1	182	0.129	
Smallmouth Bass	5/19/2017	30.3	331	0.172	
Smallmouth Bass	5/19/2017	30.5	313	0.174	
Smallmouth Bass	5/19/2017	26.8	239	0.130	
Smallmouth Bass	5/19/2017	30.0	317	0.172	
Average Total Mercury (ppm)				0.177	0.159
Redbreast Sunfish	5/19/2017	17.3	120	0.034	
Redbreast Sunfish	5/19/2017	15.8	90	0.031	
Redbreast Sunfish	5/19/2017	15.9	83	0.040	
Redbreast Sunfish	5/19/2017	13.4	47	0.036	
Redbreast Sunfish	5/19/2017	13.4	47	0.049	
Redbreast Sunfish	5/19/2017	14.0	56	0.055	
Redbreast Sunfish	5/19/2017	16.1	85	0.040	
Average Total Mercury (ppm)				0.041	0.036
White Sucker	5/19/2017	39.3	699	0.271	
White Sucker	5/19/2017	38.7	633	0.038	
White Sucker	5/19/2017	38.5	705	0.036	
White Sucker	5/19/2017	46.9	1137	0.227	
White Sucker	5/19/2017	46.4	1053	0.142	
White Sucker	5/19/2017	30.6	392	0.026	
White Sucker	5/19/2017	52.7	1593	0.163	
White Sucker	5/19/2017	28.6	257	0.117	
Average Total Mercury (ppm)				0.128	0.117

**1BSTH026.12 – Ridgeview Park, Waynesboro (control)**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/17/2017	30.6	420	0.265	
Smallmouth Bass	5/17/2017	30.6	378	0.151	
Smallmouth Bass	5/17/2017	31.8	473	0.451	
Smallmouth Bass	5/17/2017	26.6	252	0.112	
Smallmouth Bass	5/17/2017	27.0	295	0.175	
Smallmouth Bass	5/17/2017	27.8	338	0.261	
Smallmouth Bass	5/17/2017	24.4	214	0.148	
Smallmouth Bass	5/17/2017	24.2	199	0.133	
Smallmouth Bass	5/17/2017	23.2	191	0.092	
Smallmouth Bass	5/17/2017	24.4	195	0.111	
Average Total Mercury (ppm)				0.190	0.171
Redbreast Sunfish	5/17/2017	20.0	185	0.082	
Redbreast Sunfish	5/17/2017	10.5	23	0.067	
Redbreast Sunfish	5/17/2017	10.0	16	0.060	
Redbreast Sunfish	5/17/2017	15.5	76	0.132	
Average Total Mercury (ppm)				0.085	0.077
White Sucker	5/17/2017	46.0	1056	0.136	
White Sucker	5/17/2017	42.5	711	0.119	
White Sucker	5/17/2017	38.3	585	0.096	
White Sucker	5/17/2017	37.0	547	0.053	
White Sucker	5/17/2017	33.5	385	0.055	
White Sucker	5/17/2017	26.5	198	0.050	
White Sucker	5/17/2017	25.0	170	0.046	
White Sucker	5/17/2017	25.8	204	0.036	
White Sucker	5/17/2017	27.5	220	0.041	
White Sucker	5/17/2017	21.8	106	0.039	
Average Total Mercury (ppm)				0.067	0.060

**1BSTH025.10 – Constitution Park, Waynesboro**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/17/2017	28.8	305	1.980	
Smallmouth Bass	5/17/2017	27.5	285	0.587	
Smallmouth Bass	5/17/2017	27.0	263	2.180	
Smallmouth Bass	5/17/2017	23.0	211	0.478	
Smallmouth Bass	5/17/2017	25.5	247	0.659	
Smallmouth Bass	5/17/2017	25.0	217	0.943	
Smallmouth Bass	5/17/2017	26.0	225	0.777	
Smallmouth Bass	5/17/2017	20.0	110	0.600	
Smallmouth Bass	5/17/2017	20.0	121	0.407	
Smallmouth Bass	5/17/2017	20.0	107	0.400	
Average Total Mercury (ppm)				0.901	0.811
Redbreast Sunfish	5/17/2017	16.5	100	0.426	
Average Total Mercury (ppm)				0.426	0.383
White Sucker	5/17/2017	40.0	602	0.686	
White Sucker	5/17/2017	35.5	458	0.829	
White Sucker	5/17/2017	41.0	714	0.234	
White Sucker	5/17/2017	39.0	630	0.409	
White Sucker	5/17/2017	41.0	706	0.528	
White Sucker	5/17/2017	26.0	183	0.240	
White Sucker	5/17/2017	24.0	162	0.107	
White Sucker	5/17/2017	28.0	201	0.507	
White Sucker	5/17/2017	23.5	135	0.232	
White Sucker	5/17/2017	23.0	115	0.172	
Average Total Mercury (ppm)				0.394	0.355

**1BSTH022.75 – Hopeman Parkway, Waynesboro**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/16/2017	26.8	279	1.280	
Smallmouth Bass	5/16/2017	26.2	274	3.800	
Smallmouth Bass	5/16/2017	24.2	190	0.932	
Smallmouth Bass	5/16/2017	22.6	175	0.860	
Smallmouth Bass	5/16/2017	24.4	197	1.000	
Smallmouth Bass	5/16/2017	20.4	151	1.020	
Smallmouth Bass	5/16/2017	20.1	111	0.979	
Smallmouth Bass	5/16/2017	20.4	114	0.411	
Smallmouth Bass	5/16/2017	20.0	120	0.783	
Average Total Mercury (ppm)				1.229	1.106
Redbreast Sunfish	5/16/2017	14.0	65	1.010	
Redbreast Sunfish	5/16/2017	14.5	51	1.210	
Redbreast Sunfish	5/16/2017	13.0	48	0.982	
Redbreast Sunfish	5/16/2017	12.1	40	0.864	
Redbreast Sunfish	5/16/2017	12.0	31	0.654	
Average Total Mercury (ppm)				0.944	0.850
White Sucker	5/16/2017	29.6	300	0.372	
White Sucker	5/16/2017	30.0	296	0.662	
White Sucker	5/16/2017	39.2	677	1.280	
White Sucker	5/16/2017	35.8	485	1.640	
White Sucker	5/16/2017	25.0	207	0.267	
White Sucker	5/16/2017	35.4	443	0.844	
White Sucker	5/16/2017	22.2	128	1.130	
White Sucker	5/16/2017	22.4	142	0.345	
White Sucker	5/16/2017	20.4	93	1.060	
White Sucker	5/16/2017	20.0	88	0.256	
Average Total Mercury (ppm)				0.786	0.707

**1BSTH012.71 – Augusta Forestry Center, Crimora**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/18/2017	30.2	366	2.700	
Smallmouth Bass	5/18/2017	30.0	354	3.190	
Smallmouth Bass	5/18/2017	29.5	295	3.230	
Smallmouth Bass	5/18/2017	25.5	192	3.360	
Smallmouth Bass	5/18/2017	26.0	240	3.670	
Smallmouth Bass	5/18/2017	22.0	137	2.360	
Smallmouth Bass	5/18/2017	23.5	175	2.190	
Smallmouth Bass	5/18/2017	20.0	109	1.780	
Smallmouth Bass	5/18/2017	19.5	108	1.980	
Smallmouth Bass	5/18/2017	20.5	105	2.860	
Average Total Mercury (ppm)				2.732	2.459
Redbreast Sunfish	5/18/2017	15.5	78	0.900	
Redbreast Sunfish	5/18/2017	12.5	52	0.815	
Redbreast Sunfish	5/18/2017	15.5	95	0.824	
Redbreast Sunfish	5/18/2017	13.3	49	1.500	
Redbreast Sunfish	5/18/2017	14.0	56	1.080	
Redbreast Sunfish	5/18/2017	15.0	81	1.150	
Redbreast Sunfish	5/18/2017	17.0	116	0.827	
Redbreast Sunfish	5/18/2017	15.7	99	0.942	
Redbreast Sunfish	5/18/2017	14.0	56	1.110	
Redbreast Sunfish	5/18/2017	13.5	50	1.230	
Average Total Mercury (ppm)				1.038	0.934
White Sucker	5/18/2017	44.0	963	2.210	
White Sucker	5/18/2017	43.0	797	2.230	
White Sucker	5/18/2017	37.5	709	1.270	
White Sucker	5/18/2017	48.0	1278	2.530	
White Sucker	5/18/2017	49.5	1274	1.980	
White Sucker	5/18/2017	37.0	524	1.560	
White Sucker	5/18/2017	32.0	416	0.970	
White Sucker	5/18/2017	26.5	227	0.895	
White Sucker	5/18/2017	28.0	258	1.010	
Average Total Mercury (ppm)				1.628	1.465

**1BSTH007.80 – Patterson Mill Road, Harriston**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/18/2017	30.5	374	3.400	
Smallmouth Bass	5/18/2017	34.5	525	4.850	
Smallmouth Bass	5/18/2017	25.7	572	3.460	
Smallmouth Bass	5/18/2017	30.5	387	3.300	
Smallmouth Bass	5/18/2017	29.1	996	2.580	
Smallmouth Bass	5/18/2017	29.5	343	2.750	
Smallmouth Bass	5/18/2017	28.7	293	3.050	
Smallmouth Bass	5/18/2017	27.0	261	2.720	
Smallmouth Bass	5/18/2017	22.5	152	2.190	
Smallmouth Bass	5/18/2017	21.5	137	2.220	
Average Total Mercury (ppm)				3.052	2.747
Redbreast Sunfish	5/18/2017	18.2	143	0.897	
Redbreast Sunfish	5/18/2017	18.0	128	0.798	
Redbreast Sunfish	5/18/2017	18.8	145	1.080	
Redbreast Sunfish	5/18/2017	17.6	140	1.080	
Redbreast Sunfish	5/18/2017	18.5	139	0.962	
Redbreast Sunfish	5/18/2017	18.7	149	1.280	
Redbreast Sunfish	5/18/2017	15.5	80	1.210	
Redbreast Sunfish	5/18/2017	15.2	80	1.120	
Redbreast Sunfish	5/18/2017	19.0	170	0.971	
Redbreast Sunfish	5/18/2017	18.1	160	0.884	
Average Total Mercury (ppm)				1.028	0.925
White Sucker	5/18/2017	43.0	909	1.540	
White Sucker	5/18/2017	37.0	661	0.934	
White Sucker	5/18/2017	37.7	695	0.823	
White Sucker	5/18/2017	24.3	175	0.915	
White Sucker	5/18/2017	41.0	956	1.250	
White Sucker	5/18/2017	41.5	743	1.260	
White Sucker	5/18/2017	38.0	746	0.852	
Average Total Mercury (ppm)				1.082	0.974



**1BSTH02.14 – Grottoes**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/18/2017	38.5	815	1.690	
Smallmouth Bass	5/18/2017	40.0	748	1.110	
Smallmouth Bass	5/18/2017	29.5	214	1.140	
Smallmouth Bass	5/18/2017	25.3	225	2.490	
Smallmouth Bass	5/18/2017	25.8	219	2.720	
Smallmouth Bass	5/18/2017	29.0	291	2.590	
Smallmouth Bass	5/18/2017	22.2	133	0.512	
Smallmouth Bass	5/18/2017	25.0	177	1.130	
Smallmouth Bass	5/18/2017	22.7	150	2.420	
Smallmouth Bass	5/18/2017	22.0	134	2.350	
Average Total Mercury (ppm)				1.815	1.638
Redbreast Sunfish	5/18/2017	16.5	97	1.240	
Redbreast Sunfish	5/18/2017	18.5	167	0.288	
Redbreast Sunfish	5/18/2017	17.7	138	0.280	
Redbreast Sunfish	5/18/2017	18.5	153	0.335	
Redbreast Sunfish	5/18/2017	17.2	112	0.821	
Redbreast Sunfish	5/18/2017	14.5	68	0.855	
Redbreast Sunfish	5/18/2017	19.5	161	0.899	
Redbreast Sunfish	5/18/2017	16.0	96	1.150	
Redbreast Sunfish	5/18/2017	13.0	45	1.020	
Redbreast Sunfish	5/18/2017	12.0	35	0.856	
Average Total Mercury (ppm)				0.774	0.693

**1BSSF092.46 – Island Ford Landing, Mcgaheysville**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	6/7/2017	36.0	651	1.350	
Smallmouth Bass	6/7/2017	35.6	559	1.260	
Smallmouth Bass	6/7/2017	37.2	219	1.340	
Smallmouth Bass	6/7/2017	35.9	589	1.620	
Smallmouth Bass	6/7/2017	28.7	280	1.360	
Smallmouth Bass	6/7/2017	25.0	181	1.200	
Smallmouth Bass	6/7/2017	23.3	162	0.808	
Smallmouth Bass	6/7/2017	24.0	167	0.977	
Smallmouth Bass	6/7/2017	25.1	191	0.936	
Smallmouth Bass	6/7/2017	22.7	147	1.120	
Average Total Mercury (ppm)				1.197	1.077
Redbreast Sunfish	6/7/2017	18.3	135	0.373	
Redbreast Sunfish	6/7/2017	17.0	124	0.360	
Redbreast Sunfish	6/7/2017	18.5	167	0.307	
Redbreast Sunfish	6/7/2017	19.9	195	0.514	
Redbreast Sunfish	6/7/2017	17.6	130	0.435	
Redbreast Sunfish	6/7/2017	18.0	153	0.391	
Redbreast Sunfish	6/7/2017	18.3	153	0.374	
Redbreast Sunfish	6/7/2017	17.5	116	0.371	
Redbreast Sunfish	6/7/2017	17.5	135	0.441	
Redbreast Sunfish	6/7/2017	20.2	190	0.568	
Average Total Mercury (ppm)				0.413	0.371
White Sucker	6/7/2017	34.5	442	0.888	
White Sucker	6/7/2017	40.0	820	0.313	
White Sucker	6/7/2017	45.0	1016	0.855	
White Sucker	6/7/2017	42.0	982	0.347	
White Sucker	6/7/2017	41.4	903	0.392	
White Sucker	6/7/2017	43.5	961	0.294	
White Sucker	6/7/2017	48.0	1252	0.807	
White Sucker	6/7/2017	42.5	862	0.438	
Average Total Mercury (ppm)				0.54	0.49

**1BSSF078.24 – Town of Shenandoah, upstream of power dam**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	6/6/2017	35.0	521	1.360	
Smallmouth Bass	6/6/2017	34.0	394	1.430	
Smallmouth Bass	6/6/2017	27.2	290	1.240	
Smallmouth Bass	6/6/2017	28.7	271	1.020	
Smallmouth Bass	6/6/2017	26.8	239	1.190	
Smallmouth Bass	6/6/2017	27.0	272	1.270	
Smallmouth Bass	6/6/2017	24.5	189	0.790	
Smallmouth Bass	6/6/2017	21.8	135	0.732	
Smallmouth Bass	6/6/2017	24.2	168	1.040	
Smallmouth Bass	6/6/2017	22.0	132	1.020	
Average Total Mercury (ppm)				1.020	0.918
Redbreast Sunfish	6/6/2017	14.0	60	0.453	
Redbreast Sunfish	6/6/2017	13.3	51	0.370	
Redbreast Sunfish	6/6/2017	15.2	76	0.248	
Redbreast Sunfish	6/6/2017	13.9	58	0.412	
Redbreast Sunfish	6/6/2017	15.1	83	0.566	
Redbreast Sunfish	6/6/2017	16.4	85	0.547	
Redbreast Sunfish	6/6/2017	12.3	34	0.424	
Redbreast Sunfish	6/6/2017	17.7	128	0.490	
Redbreast Sunfish	6/6/2017	12.9	42	0.268	
Average Total Mercury (ppm)				0.420	0.378
White Sucker	6/6/2017	41.0	883	0.375	
White Sucker	6/6/2017	39.8	777	0.261	
White Sucker	6/6/2017	44.5	1042	0.385	
White Sucker	6/6/2017	40.3	828	0.356	
White Sucker	6/6/2017	42.5	3216	0.899	
Average Total Mercury (ppm)				0.455	0.410

**1BSSF063.17 – Newport Landing**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/23/2017	32.6	401	1.060	
Smallmouth Bass	5/23/2017	30.5	288	0.896	
Smallmouth Bass	5/23/2017	27.0	205	1.050	
Smallmouth Bass	5/23/2017	27.2	263	1.160	
Smallmouth Bass	5/23/2017	27.3	255	0.848	
Smallmouth Bass	5/23/2017	27.0	221	0.868	
Smallmouth Bass	5/23/2017	27.1	233	1.100	
Smallmouth Bass	5/23/2017	28.9	260	1.080	
Smallmouth Bass	5/23/2017	30.3	302	1.230	
Smallmouth Bass	5/23/2017	23.5	428	1.120	
Average Total Mercury (ppm)				1.041	0.937
Redbreast Sunfish	5/23/2017	20.5	190	0.269	
Redbreast Sunfish	5/23/2017	18.5	148	0.234	
Redbreast Sunfish	5/23/2017	19.5	192	0.241	
Redbreast Sunfish	5/23/2017	19.6	185	0.340	
Redbreast Sunfish	5/23/2017	19.3	158	0.284	
Redbreast Sunfish	5/23/2017	19.4	160	0.326	
Redbreast Sunfish	5/23/2017	19.6	191	0.246	
Redbreast Sunfish	5/23/2017	17.1	115	0.216	
Redbreast Sunfish	5/23/2017	16.1	92	0.479	
Redbreast Sunfish	5/23/2017	17.0	109	0.354	
Average Total Mercury (ppm)				0.299	0.269
White Sucker	5/23/2017	42.6	1043	0.343	
White Sucker	5/23/2017	39.9	883	0.281	
White Sucker	5/23/2017	41.4	943	0.268	
White Sucker	5/23/2017	41.2	957	0.253	
White Sucker	5/23/2017	41.8	817	0.345	
White Sucker	5/23/2017	40.0	874	0.204	
Average Total Mercury (ppm)				0.282	0.254

**1BSSF054.20 – White House Landing, Rt. 211**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/23/2017	22.1	133	0.392	
Smallmouth Bass	5/23/2017	24.5	167	1.060	
Smallmouth Bass	5/23/2017	30.4	315	1.260	
Smallmouth Bass	5/23/2017	33.5	415	1.260	
Smallmouth Bass	5/23/2017	30.2	308	1.290	
Smallmouth Bass	5/23/2017	30.3	448	1.440	
Smallmouth Bass	5/23/2017	29.4	289	1.290	
Smallmouth Bass	5/23/2017	27.0	225	1.070	
Smallmouth Bass	5/23/2017	26.8	237	1.000	
Smallmouth Bass	5/23/2017	24.9	177	0.776	
Average Total Mercury (ppm)				1.084	0.972
Redbreast Sunfish	5/23/2017	21.7	227	0.431	
Redbreast Sunfish	5/23/2017	20.6	198	0.370	
Redbreast Sunfish	5/23/2017	15.8	78	0.397	
Redbreast Sunfish	5/23/2017	20.5	210	0.240	
Redbreast Sunfish	5/23/2017	19.0	152	0.343	
Redbreast Sunfish	5/23/2017	18.5	144	0.241	
Redbreast Sunfish	5/23/2017	18.7	130	0.570	
Redbreast Sunfish	5/23/2017	17.6	105	0.325	
Redbreast Sunfish	5/23/2017	16.8	90	0.386	
Redbreast Sunfish	5/23/2017	22.0	278	0.414	
Average Total Mercury (ppm)				0.372	0.333
White Sucker	5/23/2017	39.0	749	0.373	
White Sucker	5/23/2017	37.2	559	0.328	
Average Total Mercury (ppm)				0.351	0.315
Channel Catfish	5/23/2017	53.9	1566	0.505	
Channel Catfish	5/23/2017	55.0	1460	0.503	
Channel Catfish	5/23/2017	64.0	2917	0.422	
Channel Catfish	5/23/2017	59.5	2556	0.464	
Average Total Mercury (ppm)				0.474	0.423

**1BSSF030.80 – Compton, upstream of rapids**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	6/7/2017	40.5	862	1.000	
Smallmouth Bass	6/7/2017	41.0	839	1.250	
Smallmouth Bass	6/7/2017	29.8	279	1.060	
Smallmouth Bass	6/7/2017	29.0	287	0.888	
Smallmouth Bass	6/7/2017	25.0	183	0.863	
Smallmouth Bass	6/7/2017	24.3	183	0.650	
Smallmouth Bass	6/7/2017	25.5	198	0.932	
Smallmouth Bass	6/7/2017	26.0	216	0.915	
Smallmouth Bass	6/7/2017	24.0	167	0.751	
Average Total Mercury (ppm)				0.923	0.831
Redbreast Sunfish	6/7/2017	20.2	176	0.366	
Redbreast Sunfish	6/7/2017	17.1	108	0.342	
Redbreast Sunfish	6/7/2017	17.5	120	0.405	
Redbreast Sunfish	6/7/2017	17.8	122	0.431	
Redbreast Sunfish	6/7/2017	19.0	158	0.372	
Redbreast Sunfish	6/7/2017	16.9	95	0.487	
Redbreast Sunfish	6/7/2017	16.5	86	0.432	
Redbreast Sunfish	6/7/2017	15.8	75	0.224	
Redbreast Sunfish	6/7/2017	14.0	55	0.295	
Average Total Mercury (ppm)				0.373	0.336
Channel Catfish	6/7/2017	53.5	1559	0.323	
Channel Catfish	6/7/2017	56.5	1757	0.283	
Channel Catfish	6/7/2017	47.0	964	0.450	
Channel Catfish	6/7/2017	52.0	1190	0.317	
Channel Catfish	6/7/2017	55.5	1672	0.731	
Channel Catfish	6/7/2017	64.5	2920	0.825	
Channel Catfish	6/7/2017	55.5	1757	0.363	
Channel Catfish	6/7/2017	57.0	1871	0.475	
Channel Catfish	6/7/2017	66.0	3373	0.600	
Channel Catfish	6/7/2017	45.0	822	0.287	
Average Total Mercury (ppm)				0.465	0.419

**1BSSF022.99 – Hazards Mill Landing**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/24/2017	34.0	468	1.500	
Smallmouth Bass	5/24/2017	32.0	418	0.979	
Smallmouth Bass	5/24/2017	29.4	333	0.931	
Smallmouth Bass	5/24/2017	29.8	353	0.961	
Smallmouth Bass	5/24/2017	27.0	230	0.962	
Smallmouth Bass	5/24/2017	40.1	796	1.250	
Smallmouth Bass	5/24/2017	21.5	108	0.418	
Smallmouth Bass	5/24/2017	33.5	523	1.260	
Smallmouth Bass	5/24/2017	34.7	591	1.190	
Smallmouth Bass	5/24/2017	24.0	174	0.679	
Average Total Mercury (ppm)				1.013	0.912
Redbreast Sunfish	5/24/2017	20.0	185	0.524	
Redbreast Sunfish	5/24/2017	20.0	182	0.512	
Redbreast Sunfish	5/24/2017	19.5	177	0.305	
Redbreast Sunfish	5/24/2017	19.6	197	0.303	
Redbreast Sunfish	5/24/2017	20.0	192	0.441	
Redbreast Sunfish	5/24/2017	18.4	149	0.328	
Redbreast Sunfish	5/24/2017	18.5	138	0.400	
Redbreast Sunfish	5/24/2017	18.0	146	0.499	
Redbreast Sunfish	5/24/2017	16.0	121	0.259	
Redbreast Sunfish	5/24/2017	16.5	84	0.485	
Average Total Mercury (ppm)				0.406	0.365
Channel Catfish	5/24/2017	42.1	787	1.050	
Channel Catfish	5/24/2017	56.4	1820	0.380	
Channel Catfish	5/24/2017	55.4	1772	0.464	
Channel Catfish	5/24/2017	56.0	1702	0.632	
Channel Catfish	5/24/2017	55.3	1832	0.838	
Channel Catfish	5/24/2017	59.0	2005	0.628	
Channel Catfish	5/24/2017	34.1	368	0.301	
Channel Catfish	5/24/2017	54.5	1560	0.383	
Channel Catfish	5/24/2017	51.6	1726	0.475	
Channel Catfish	5/24/2017	47.5	1195	0.238	
Average Total Mercury (ppm)				0.539	0.485

**1BSSF003.50 – Front Royal, Luray Ave. Landing**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/22/2017	25.6	223	1.060	
Smallmouth Bass	5/22/2017	26.0	238	1.290	
Smallmouth Bass	5/22/2017	28.2	271	1.000	
Smallmouth Bass	5/22/2017	26.5	267	0.712	
Smallmouth Bass	5/22/2017	21.1	124	0.732	
Smallmouth Bass	5/22/2017	29.6	145	0.582	
Smallmouth Bass	5/22/2017	29.6	317	0.837	
Smallmouth Bass	5/22/2017	25.5	197	0.897	
Smallmouth Bass	5/22/2017	25.7	186	0.641	
Smallmouth Bass	5/22/2017	27.4	227	0.809	
Average Total Mercury (ppm)				0.856	0.770
Redbreast Sunfish	5/22/2017	14.0	47	0.433	
Redbreast Sunfish	5/22/2017	14.3	56	0.534	
Redbreast Sunfish	5/22/2017	15.6	83	0.242	
Redbreast Sunfish	5/22/2017	13.5	46	0.461	
Redbreast Sunfish	5/22/2017	15.5	69	0.636	
Redbreast Sunfish	5/22/2017	15.7	72	0.411	
Redbreast Sunfish	5/22/2017	13.8	54	0.384	
Redbreast Sunfish	5/22/2017	14.2	60	0.311	
Redbreast Sunfish	5/22/2017	14.3	61	0.476	
Redbreast Sunfish	5/22/2017	14.5	60	0.469	
Average Total Mercury (ppm)				0.436	0.392
Channel Catfish	5/22/2017	64.0	3088	0.513	
Channel Catfish	5/22/2017	61.4	1500	0.192	
Channel Catfish	5/22/2017	55.3	1939	0.594	
Channel Catfish	5/22/2017	54.5	1800	0.959	
Channel Catfish	5/22/2017	62.4	2436	0.229	
Channel Catfish	5/22/2017	58.0	1960	0.526	
Channel Catfish	5/22/2017	59.8	1660	1.360	
Channel Catfish	5/22/2017	54.6	1649	0.193	
Channel Catfish	5/22/2017	50.8	1382	0.449	
Average Total Mercury (ppm)				0.557	0.501



**1BSHN038.48 – Rt. 17/50 Landing**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/24/2017	28.6	260	0.608	
Smallmouth Bass	5/24/2017	32.0	473	0.406	
Smallmouth Bass	5/24/2017	30.7	438	0.416	
Smallmouth Bass	5/24/2017	23.8	169	0.277	
Smallmouth Bass	5/24/2017	24.9	446	0.575	
Smallmouth Bass	5/24/2017	20.5	106	0.552	
Smallmouth Bass	5/24/2017	24.4	191	0.453	
Smallmouth Bass	5/24/2017	37.4	603	0.533	
Smallmouth Bass	5/24/2017	30.7	283	0.438	
Smallmouth Bass	5/24/2017	28.3	331	0.478	
Average Total Mercury (ppm)				0.474	0.427
Redbreast Sunfish	5/24/2017	18.5	133	0.250	
Redbreast Sunfish	5/24/2017	14.4	63	0.238	
Redbreast Sunfish	5/24/2017	18.5	118	0.242	
Redbreast Sunfish	5/24/2017	13.5	43	0.184	
Redbreast Sunfish	5/24/2017	13.9	42	0.186	
Redbreast Sunfish	5/24/2017	15.7	74	0.228	
Redbreast Sunfish	5/24/2017	13.0	40	0.174	
Redbreast Sunfish	5/24/2017	12.1	33	0.170	
Redbreast Sunfish	5/24/2017	13.0	36	0.171	
Redbreast Sunfish	5/24/2017	21.0	202	0.313	
Average Total Mercury (ppm)				0.216	0.194
White Sucker	5/24/2017	44.8	1070	0.372	
White Sucker	5/24/2017	41.3	872	0.184	
White Sucker	5/24/2017	47.4	1242	0.488	
Average Total Mercury (ppm)				0.348	0.313
Channel Catfish	5/24/2017	38.5	471	0.333	
Channel Catfish	5/24/2017	37.5	493	0.440	
Channel Catfish	5/24/2017	41.5	605	0.300	
Channel Catfish	5/24/2017	41.4	634	0.294	
Channel Catfish	5/24/2017	41.3	539	0.247	
Channel Catfish	5/24/2017	47.8	884	0.354	
Channel Catfish	5/24/2017	38.6	473	0.270	
Channel Catfish	5/24/2017	42.6	804	0.432	
Channel Catfish	5/24/2017	37.7	482	0.375	
Channel Catfish	5/24/2017	48.0	1128	0.479	
Average Total Mercury (ppm)				0.352	0.317

**1BSHN038.48 – Rt. 17/50 Landing: Walleye**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Walleye	5/24/2017	44.5	938	0.547	
Walleye	5/24/2017	43.2	888	0.563	
Walleye	5/24/2017	41.0	653	0.552	
Walleye	5/24/2017	56.1	1769	1.450	
Walleye	5/24/2017	62.0	3200	1.350	
Walleye	5/24/2017	42.5	721	0.944	
Walleye	5/24/2017	44.6	794	0.534	
Walleye	5/24/2017	50.5	1351	0.779	
Walleye	5/24/2017	56.0	1794	1.450	
Average Total Mercury (ppm)				0.908	0.817

**1BSHN032.65 – Lockes Landing**

Species	Collection Date	Length (cm)	Mass (g)	Total Mercury (ppm)	Estimated Methylmercury (ppm)
Smallmouth Bass	5/22/2017	27.8	271	0.535	
Smallmouth Bass	5/22/2017	31.0	423	0.473	
Smallmouth Bass	5/22/2017	33.1	517	0.347	
Smallmouth Bass	5/22/2017	32.4	435	0.369	
Smallmouth Bass	5/22/2017	34.2	549	0.482	
Smallmouth Bass	5/22/2017	39.0	756	0.702	
Smallmouth Bass	5/22/2017	28.1	274	0.324	
Smallmouth Bass	5/22/2017	29.6	347	0.360	
Smallmouth Bass	5/22/2017	29.0	303	0.364	
Smallmouth Bass	5/22/2017	27.6	289	0.542	
Average Total Mercury (ppm)				0.450	0.405
Redbreast Sunfish	5/22/2017	20.0	199	0.125	
Redbreast Sunfish	5/22/2017	16.6	94	0.251	
Redbreast Sunfish	5/22/2017	18.1	123	0.200	
Redbreast Sunfish	5/22/2017	19.2	143	0.365	
Redbreast Sunfish	5/22/2017	19.7	168	0.150	
Redbreast Sunfish	5/22/2017	16.3	89	0.220	
Redbreast Sunfish	5/22/2017	18.5	137	0.278	
Redbreast Sunfish	5/22/2017	18.4	127	0.170	
Redbreast Sunfish	5/22/2017	14.3	55	0.195	
Redbreast Sunfish	5/22/2017	17.6	112	0.203	
Average Total Mercury (ppm)				0.216	0.194
White Sucker	5/22/2017	46.9	1274	0.610	
White Sucker	5/22/2017	38.4	740	0.228	
White Sucker	5/22/2017	41.2	922	0.254	
White Sucker	5/22/2017	48.5	1237	0.350	
Average Total Mercury (ppm)				0.361	0.325
Channel Catfish	5/22/2017	41.5	628	0.296	
Channel Catfish	5/22/2017	38.5	495	0.223	
Channel Catfish	5/22/2017	45.5	833	0.208	
Channel Catfish	5/22/2017	42.0	676	0.202	
Channel Catfish	5/22/2017	41.8	676	0.212	
Channel Catfish	5/22/2017	41.8	806	0.240	
Channel Catfish	5/22/2017	49.1	1054	0.280	
Channel Catfish	5/22/2017	42.9	648	0.316	
Channel Catfish	5/22/2017	43.7	868	0.219	
Channel Catfish	5/22/2017	38.0	514	0.323	
Average Total Mercury (ppm)				0.252	0.227