

SHENANDOAH RIVER MERCURY MONITORING RESULTS
RESULTS OF 1999 FISH TISSUE SAMPLING
(Updated March 2000)

Since mercury was discovered in the South River in the early 1970s, the State Water Control Board and, more recently, the Department of Environmental Quality staff have monitored mercury levels in fish, water, and sediments in the South River and South Fork Shenandoah River. The mercury contamination originated from historic practices at the Du Pont Co. plant in Waynesboro. In a settlement between Du Pont and the State Water Control Board in the early 1980s, a trust fund was established to support monitoring in the river for a projected 100-year period.

There have been restrictions or health advisories on consumption of fish from portions of the South and South Fork Shenandoah Rivers since the 1970s. The current advisory, which includes the South River from Waynesboro to Port Republic and the South Fork Shenandoah River from Port Republic to the Page/Warren County line, has been in place since the 1980s.

The information below represents the most recent data in DEQ's ongoing monitoring program for mercury in the South River and South Fork Shenandoah River. All results below are taken from fillets of individual fish. As a frame of reference, the U.S. Food and Drug Administration action level for methyl mercury in the edible portion of fish is 1.0 part per million. Previous studies in the Shenandoah River system have shown that approximately 90 percent of the total mercury in fish tissue is methyl mercury.

Planning and project design for this effort was a collaborative effort between DEQ, the Department of Game and Inland Fisheries, and the Virginia Department of Health. This information is being evaluated by the Health Department, which is responsible for identifying human health effects of mercury-contaminated fish. Revised or additional data will be posted promptly as they are received.

SOUTH RIVER AT RIDGEVIEW PARK, WAYNESBORO (upstream of Du Pont) (01)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Smallmouth Bass	9/13/99	23.2	160	0.19
Smallmouth Bass	9/13/99	36.3	616	0.33
Smallmouth Bass	9/10/99	22.0	106	0.17
Smallmouth Bass	9/10/99	21.0	130	0.32
Smallmouth Bass	9/10/99	25.2	189	0.20
Smallmouth Bass	9/13/99	25.3	230	0.19
Smallmouth Bass	9/13/99	21.8	133	0.11
Smallmouth Bass	9/10/99	17.4	70	0.16
Avg. Smallmouth Bass				0.21

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SOUTH RIVER AT CONSTITUTION PARK, WAYNESBORO (Near Du Pont footbridge) (02)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Smallmouth Bass	9/2/99	26.1	270	0.70
Smallmouth Bass	9/2/99	23.8	185	0.28
Smallmouth Bass	9/2/99	23.0	180	0.32
Smallmouth Bass	9/2/99	19.2	113	0.24
Smallmouth Bass	9/2/99	30.0	348	0.61
Smallmouth Bass	9/2/99	22.0	150	0.31
Smallmouth Bass	9/2/99	23.7	192	0.47
Smallmouth Bass	9/2/99	32.9	505	0.65
Smallmouth Bass	9/2/99	36.5	688	0.89
Smallmouth Bass	9/2/99	37.0	649	0.77
Avg. Smallmouth Bass				0.52
White Sucker	9/2/99	40.3	779	0.26
White Sucker	9/2/99	33.0	391	0.19
White Sucker	9/2/99	27.2	237	0.12
White Sucker	9/2/99	32.4	434	0.10
White Sucker	9/2/99	23.8	144	0.26
White Sucker	9/2/99	22.7	122	0.19
White Sucker	9/2/99	23.8	142	0.14
White Sucker	9/2/99	21.6	114	0.16
White Sucker	9/2/99	22.0	113	0.16
Avg. White Sucker				0.18
Rainbow Trout	9/2/99	30.0	253	0.15
Rainbow Trout	9/2/99	25.3	148	0.15
Rainbow Trout	9/2/99	27.4	174	0.19
Rainbow Trout	9/2/99	26.4	201	0.17
Rainbow Trout	9/2/99	28.1	198	0.11
Rainbow Trout	9/2/99	32.5	357	0.10
Rainbow Trout	9/2/99	32.0	300	0.10
Rainbow Trout	9/2/99	33.1	280	0.11
Rainbow Trout	9/2/99	26.9	219	0.16
Avg. Rainbow Trout				0.14
Rock Bass	9/2/99	18.4	122	0.97
Rock Bass	9/2/99	16.7	83	0.86
Rock Bass	9/2/99	18.6	128	0.99
Rock Bass	9/2/99	19.5	144	0.82
Rock Bass	9/2/99	17.0	105	0.55
Rock Bass	9/2/99	16.8	92	0.39
Rock Bass	9/2/99	18.6	132	1.00
Rock Bass	9/2/99	16.2	87	0.30
Rock Bass	9/2/99	17.3	105	0.77
Rock Bass	9/2/99	17.7	117	0.38
Avg. Rock Bass				0.70

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SOUTH FORK SHENANDOAH RIVER AT PORT REPUBLIC (at DGIF landing) (5b)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Channel catfish	7/8/99	42.8	625	0.60
Channel catfish	7/8/99	42.5	720	0.80
Channel catfish	7/8/99	68.2	3366	2.50
Channel catfish	7/8/99	55.1	1733	1.18
Channel catfish	8/5/99	43.2	782	0.24
Channel catfish	8/5/99	30.7	244	0.22
Channel catfish	8/6/99	32.4	302	0.32
Channel catfish	8/6/99	62.4	2700	1.11
Channel catfish	8/6/99	76.2	6420	0.70
Avg. Channel Catfish				0.85

SOUTH FORK SHENANDOAH RIVER AT TOWN OF SHENANDOAH (above dam) (08)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Channel Catfish	7/14/99	36.8	410	0.49
Channel Catfish	7/14/99	34.2	290	0.46
Channel Catfish	7/15/99	43.5	740	0.38
Channel Catfish	7/16/99	35.3	280	0.49
Channel Catfish	7/16/99	62.5	2780	0.80
Channel Catfish	7/16/99	48.0	1160	0.40
Channel Catfish	7/16/99	67.0	3138	1.99
Channel Catfish	7/16/99	39.2	440	0.43
Avg. Channel Catfish				0.68

SOUTH FORK SHENANDOAH AT NEWPORT LANDING (09)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Smallmouth Bass	9/13/99	32.0	417	1.60
Smallmouth Bass	9/13/99	27.0	235	1.30
Smallmouth Bass	9/13/99	23.0	163	0.95
Smallmouth Bass	9/13/99	27.0	242	1.30
Smallmouth Bass	9/13/99	22.5	165	0.83
Smallmouth Bass	9/13/99	22.0	124	0.90
Smallmouth Bass	9/13/99	22.5	144	1.20
Smallmouth Bass	9/13/99	21.5	132	1.20
Smallmouth Bass	9/13/99	21.5	128	0.81
Smallmouth Bass	9/13/99	21.0	115	0.88
Avg. Smallmouth Bass				1.10
Redbreast Sunfish	9/13/99	20.0	164	0.86
Redbreast Sunfish	9/13/99	17.2	113	0.50
Redbreast Sunfish	9/13/99	17.5	101	0.66
Redbreast Sunfish	9/13/99	20.0	151	0.88
Redbreast Sunfish	9/13/99	19.0	122	1.30
Redbreast Sunfish	9/13/99	18.0	116	0.67
Redbreast Sunfish	9/13/99	17.5	119	0.56
Redbreast Sunfish	9/13/99	17.5	125	0.36
Redbreast Sunfish	9/13/99	17.0	111	0.41
Redbreast Sunfish	9/13/99	17.8	112	0.58
Avg. Redbreast Sunfish				0.68
Redhorse Sucker	9/13/99	56	2284	0.92

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Redhorse Sucker	9/13/99	52	1817	0.84
Redhorse Sucker	9/13/99	48.5	1484	0.91
Redhorse Sucker	9/13/99	52	1645	0.87
Redhorse Sucker	9/13/99	47	1157	0.62
Redhorse Sucker	9/13/99	45.5	1095	0.85
Redhorse Sucker	9/13/99	45.5	983	0.72
Redhorse Sucker	9/13/99	39	638	0.58
Redhorse Sucker	9/13/99	37.5	636	0.52
Redhorse Sucker	9/13/99	49	1437	0.83
Avg. Redhorse Sucker				0.77

SOUTH FORK SHENANDOAH RIVER AT WHITEHOUSE LANDING (10)

Species	Sample date	Length (cm)	Weight (g)	Total mercury (ppm)
Channel catfish	7/28/99	33.9	310	0.55
Channel catfish	7/28/99	29.6	300	0.59
Channel catfish	7/28/99	33.4	340	0.44
Channel catfish	7/28/99	50.4	1204	0.57
Channel catfish	7/28/99	60.6	2320	0.44
Channel catfish	7/28/99	31.9	310	0.61
Channel catfish	7/28/99	54.5	1900	0.56
Channel catfish	7/28/99	66.0	3050	0.79
Channel catfish	7/28/99	68.4	3860	2.15
Channel catfish	7/29/99	42.2	720	0.47
Avg. Channel Catfish				0.72

SHENANDOAH RIVER AT BERRYVILLE (KARO LANDING) (13)

Species	Sample Date	Length (cm)	Weight (g)	Total Mercury (ppm)
Channel catfish	7/22/99	64.2	3420	0.89
Channel catfish	7/22/99	69.4	4060	1.08
Channel catfish	7/22/99	49.8	1400	0.45
Channel catfish	7/22/99	62.7	2530	0.40
Channel catfish	7/22/99	39.4	640	0.36
Channel catfish	7/22/99	54.8	1730	0.63
Channel catfish	7/22/99	51.7	1870	0.42
Channel catfish	7/22/99	46.7	1040	0.58
Channel catfish	7/22/99	40.9	690	0.42
Channel catfish	7/22/99	39.0	560	0.38
Avg. Channel Catfish				0.56