



Cuyahoga River Upstream of Rockside Road
6/23/2022 10:20:00 AM
River Mile: 13.15
Collection Method: Boat Electrofishing
Drainage Area: 703 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	2	3	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	8	2.18	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	7	0.8150	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	22	0.26	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	21	68.0390	Tolerant	1	Fin Erosion
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.0120	Tolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	18	0.22	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	157	0.5590	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	101	0.2120	Moderately Intolerant	0	--
43-035	<i>Notropis volucellus</i> Mimic shiner	1	0.0020	Intolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	2	0.01	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	35	0.0750	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	16	31.0410	--	3	Lesions
47-007	<i>Pylodictis olivaris</i> Flathead catfish	6	17.2370	--	2	Lesions
74-001	<i>Morone chrysops</i> White bass	1	0.0580	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	16	1.7170	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	4	0.09	Tolerant	0	--



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77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.03	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	8	0.11	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	3	0.0040	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	1	0.0010	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.0550	--	0	--
Totals		436	125.7270		6	

*DELTA anomalies were observed on = 1.3 % of the fish collected

Index of Biotic Integrity (IBI) = 38 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.1 (Good)

Shannon Diversity Index, no. 2.10

Shannon Diversity Index, wt. 1.29

N = 762

B = 114.52



Cuyahoga River Upstream of Rockside Road
8/17/2022 9:00:00 AM
River Mile: 13.15
Collection Method: Boat Electrofishing
Drainage Area: 703 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	142	0.8940	--	0	--
40-005	<i>Carpionodes cyprinus</i> Central quillback carpsucker	3	0.03	--	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.52	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	28	1.4520	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	22	2.7850	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	78	1.2080	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	1	1.8140	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	2	0.0060	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	14	0.0220	Tolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	235	0.9580	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	165	0.7050	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	157	0.38	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	3	0.01	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	10	0.0160	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	197	0.6330	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	8	3.20	--	0	--
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.0080	Tolerant	0	--



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47-007	<i>Pylodictis olivaris</i> Flathead catfish	5	11.2020	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	22	3.0240	Moderately Intolerant	1	Lesions
77-008	<i>Lepomis cyanellus</i> Green sunfish	2	0.0150	Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	8	0.1320	Moderately Intolerant	0	--
80-014	<i>Etheostoma nigrum</i> Johnny darter	1	0.0020	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	36	0.0570	Moderately Intolerant	0	--
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	0.4350	Moderately Tolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	8	0.0380	--	0	--
Totals		1150	29.5460		1	

*DELT anomalies were observed on = 0.0 % of the fish collected

Index of Biotic Integrity (IBI) = 38 (Marginally Good)

Modified Index of Well-Being (MIwb) = 10.2 (Exceptional)

Shannon Diversity Index, no. 2.27

Shannon Diversity Index, wt. 2.16

N = 2068

B = 52.84



Cuyahoga River Downstream of Mill Creek (Site 22.9)

6/23/2022 1:45:00 PM

River Mile: 11.30

Collection Method: Boat Electrofishing

Drainage Area: 730 square miles

0.50 km

IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	1	0.0180	--	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	6	4.40	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	7	1.60	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	52	0.2750	Tolerant	0	--
43-002	<i>Carassius auratus</i> Goldfish	1	0.0150	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	1	0.0020	Tolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	5	0.0430	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spottfin shiner	52	0.2330	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	49	0.13	Moderately Intolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	11	0.0470	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	50	0.0420	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	42	59.4210	--	6	Lesions
47-007	<i>Pylodictis olivaris</i> Flathead catfish	5	3.1750	--	0	--
74-001	<i>Morone chrysops</i> White bass	1	0.06	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	32	6.03	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.0090	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	4	0.0550	Moderately Tolerant	0	--



Cuyahoga River Downstream of Mill Creek (Site 22.9)

6/23/2022 1:45:00 PM

River Mile: 11.30

Collection Method: Boat Electrofishing

Drainage Area: 730 square miles

0.50 km

IBI Type: Boat

80-003	<i>Perca flavescens</i> Yellow perch	2	0.08	--	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	24	0.24	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	6	0.0210	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	6	0.0630	--	0	--
Totals		358	75.9590		6	

*DELT anomalies were observed on = 1.6 % of the fish collected

Index of Biotic Integrity (IBI) = 36 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.0 (Good)

Shannon Diversity Index, no. 2.43

Shannon Diversity Index, wt. 0.88

N = 572

B = 151.10



Cuyahoga River Downstream of Mill Creek (Site 22.9)

8/17/2022 1:00:00 PM

River Mile: 11.30

Collection Method: Boat Electrofishing

Drainage Area: 730 square miles

0.50 km

IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	12	0.0990	--	0	--
40-005	<i>Carpionodes cyprinus</i> Central quillback carpsucker	4	0.0110	--	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	11	1.12	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	15	4.58	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	26	0.0660	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	1	5.4430	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.0050	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	8	0.0380	--	0	--
43-025	<i>Notropis chrysocephalus</i> Striped shiner	1	0.0380	--	0	--
43-026	<i>Notropis cornutus</i> Common shiner	52	0.22	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	52	0.16	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	3	0.0080	Moderately Intolerant	0	--
43-042	<i>Pimephales promelas</i> Northern fathead minnow	10	0.0110	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	15	0.0310	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	51	0.1420	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	9	7.2570	--	1	Fin Erosion
47-007	<i>Pylodictis olivaris</i> Flathead catfish	3	8.8880	--	0	--



Cuyahoga River Downstream of Mill Creek (Site 22.9)

8/17/2022 1:00:00 PM

River Mile: 11.30

Collection Method: Boat Electrofishing

Drainage Area: 730 square miles

0.50 km

IBI Type: Boat

77-004	<i>Micropterus dolomieu</i> Smallmouth bass	25	3.47	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.0140	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	0.0110	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	13	0.24	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	5	0.01	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	18	0.1570	--	0	--
Totals		338	32.0190		1	

*DELT anomalies were observed on = $\frac{0.2}{---}$ % of the fish collected

Index of Biotic Integrity (IBI) = 38 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.6 (Very Good)

Shannon Diversity Index, no. 2.63

Shannon Diversity Index, wt. 1.85

N = 530

B = 52.58



Cuyahoga River Upstream of Southerly WWTC (Site 22.76)
6/24/2022 8:30:00 AM
River Mile: 10.75
Collection Method: Boat Electrofishing
Drainage Area: 743 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	4.3090	--	0	--
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	1	0.0350	--	0	--
40-008	<i>Moxostoma anisurum</i> Silver redhorse	1	0.0340	Moderately Intolerant	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.67	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	24	7.30	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	6	0.7620	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	33	0.7320	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	17	65.77	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	1	0.0030	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	3	0.0050	--	0	--
43-026	<i>Notropis cornutus</i> Common shiner	4	0.0750	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	21	0.07	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	41	0.12	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	4	0.0120	--	0	--
43-042	<i>Pimephales promelas</i> Northern fathead minnow	2	0.0060	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	12	0.03	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	3	0.0030	--	0	--



Cuyahoga River Upstream of Southerly WWTC (Site 22.76)

6/24/2022 8:30:00 AM

River Mile: 10.75

Collection Method: Boat Electrofishing

Drainage Area: 743 square miles

0.50 km

IBI Type: Boat

43-047	<i>Ctenopharyngodon idella</i> Grass carp	1	7.2570	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	17	23.6960	--	1	Lesions
47-007	<i>Pylodictis olivaris</i> Flathead catfish	2	2.7210	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	13	2.34	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	3	0.0230	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	3	0.02	Moderately Tolerant	0	--
80-003	<i>Perca flavescens</i> Yellow perch	1	0.0180	--	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	9	0.0820	Moderately Intolerant	0	--
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	3	3.3030	Moderately Tolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	15	0.1420	--	0	--
Totals		242	119.5380		1	

*DELT anomalies were observed on = 0.4 % of the fish collected

Index of Biotic Integrity (IBI) = 36 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.4 (Very Good)

Shannon Diversity Index, no. 2.73

Shannon Diversity Index, wt. 1.51

N = 316

B = 91.15



Cuyahoga River Upstream of Southerly WWTC (Site 22.76)
8/16/2022 8:35:00 AM
River Mile: 10.75
Collection Method: Boat Electrofishing
Drainage Area: 743 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	22	1.60	--	0	--
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	2	0.88	--	0	--
40-008	<i>Moxostoma anisurum</i> Silver redhorse	1	2.50	Moderately Intolerant	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	27	3.4430	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	31	2.8480	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	5	1.40	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	15	1.1530	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	4	14.5150	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	1	0.0020	Tolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	25	0.1810	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	24	0.0860	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	11	0.02	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	4	0.0070	--	0	--
43-042	<i>Pimephales promelas</i> Northern fathead minnow	4	0.0050	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	66	0.08	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	9	0.01	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	4	1.38	--	0	--



Cuyahoga River Upstream of Southerly WWTC (Site 22.76)
8/16/2022 8:35:00 AM
River Mile: 10.75
Collection Method: Boat Electrofishing
Drainage Area: 743 square miles
0.50 km
IBI Type: Boat

47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.03	Tolerant	0	--
47-007	<i>Pylodictis olivaris</i> Flathead catfish	1	0.28	--	0	--
74-001	<i>Morone chrysops</i> White bass	1	0.36	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	13	4.3280	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	2	0.0210	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	3	0.09	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	8	0.1120	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	4	0.0030	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	7	0.0850	--	0	--
Totals		295	35.4190		0	

*DELT anomalies were observed on = 0 % of the fish collected

Index of Biotic Integrity (IBI) = 36 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.5 (Very Good)

Shannon Diversity Index, no. 2.67

Shannon Diversity Index, wt. 2.05

N = 390

B = 39.06



Cuyahoga River Downstream of Southerly WWTC (Site
22.71)

6/24/2022 11:00:00 AM

River Mile: 10.10

Collection Method: Boat Electrofishing

Drainage Area: 744 square miles

0.50 km

IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies #	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	2	0.05	--	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	2	2.4950	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	13	3.7780	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	1	0.24	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	124	0.1870	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	18	46.72	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	21	0.1530	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	239	0.2840	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	103	0.1810	Moderately Intolerant	0	--
43-042	<i>Pimephales promelas</i> Northern fathead minnow	6	0.0160	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	6	0.0170	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	19	0.0310	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	11	17.4630	--	0	--
47-007	<i>Pylodictis olivaris</i> Flathead catfish	4	11.34	--	0	--
74-001	<i>Morone chrysops</i> White bass	1	0.53	--	0	--
74-003	<i>Morone americana</i> White perch	3	0.09	--	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.1120	--	0	--



**Cuyahoga River Downstream of Southerly WWTC (Site
 22.71)**
6/24/2022 11:00:00 AM
River Mile: 10.10
Collection Method: Boat Electrofishing
Drainage Area: 744 square miles
0.50 km
IBI Type: Boat

77-004	<i>Micropterus dolomieu</i> Smallmouth bass	26	5.2580	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	5	0.0680	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	3	0.19	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	10	0.10	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	12	0.0880	--	0	--
Totals		630	89.3910		0	

*DELT anomalies were observed on = 0 % of the fish collected

Index of Biotic Integrity (IBI) = 36 (Marginally Good)

Modified Index of Well-Being (MIwb) = 9.1 (Very Good)

Shannon Diversity Index, no. 2.01

Shannon Diversity Index, wt. 1.48

N = 912

B = 84.41



**Cuyahoga River Downstream of Southerly WWTC (Site
 22.71)
 8/16/2022 10:40:00 AM
 River Mile: 10.10
 Collection Method: Boat Electrofishing
 Drainage Area: 744 square miles
 0.50 km
 IBI Type: Boat**

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	9	1.18	--	0	--
40-002	<i>Ictiobus cyprinellus</i> Bigmouth buffalo	2	6.2360	--	1	Fin Erosion
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	4	1.2320	--	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	2.90	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	43	6.4470	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	4	1.80	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	31	0.9880	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	8	31.9780	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	2	0.0040	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	13	0.0110	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	20	0.0620	--	0	--
43-026	<i>Notropis cornutus</i> Common shiner	36	0.0710	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	84	0.2090	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	46	0.08	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	1	0.0020	--	0	--
43-042	<i>Pimephales promelas</i> Northern fathead minnow	3	0.0070	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	45	0.0440	Tolerant	0	--



Cuyahoga River Downstream of Southerly WWTC (Site 22.71)

8/16/2022 10:40:00 AM

River Mile: 10.10

Collection Method: Boat Electrofishing

Drainage Area: 744 square miles

0.50 km

IBI Type: Boat

43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	42	0.1250	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	10	11.8290	--	5	Lesions
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	0.0380	Tolerant	0	--
47-007	<i>Pylodictis olivaris</i> Flathead catfish	11	7.57	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	14	3.18	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	4	0.04	Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.03	Moderately Intolerant	0	--
80-014	<i>Etheostoma nigrum</i> Johnny darter	1	0.0020	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	4	0.0260	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	1	0.0020	Moderately Intolerant	0	--
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	3	4.33	Moderately Tolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	22	0.1530	--	0	--
Totals		470	80.5760		6	

*DELT anomalies were observed on = $\frac{1.2}{---}$ % of the fish collected

Index of Biotic Integrity (IBI) = 36 (Marginally Good)

Modified Index of Well-Being (MIwb) = 10.3 (Exceptional)

Shannon Diversity Index, no. 2.76

Shannon Diversity Index, wt. 2.02

N = 680

B = 94.63



Cuyahoga River Upstream of Big Creek
6/24/2022 1:50:00 PM
River Mile: 8.60
Collection Method: Boat Electrofishing
Drainage Area: 745 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	2	0.08	--	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	3	3.1750	Moderately Intolerant	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	15	6.37	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	10	1.65	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	37	1.0970	Tolerant	1	Lesions
43-001	<i>Cyprinus carpio</i> Common carp	3	7.2570	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	17	0.0450	--	0	--
43-026	<i>Notropis cornutus</i> Common shiner	2	0.0380	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	8	0.04	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	15	0.0770	Moderately Intolerant	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	6	10.8860	--	0	--
47-007	<i>Pylodictis olivaris</i> Flathead catfish	1	0.1340	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	9	0.5750	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.01	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	0.0720	Moderately Tolerant	0	--
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.0810	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	12	0.0990	Moderately Intolerant	0	--



Cuyahoga River Upstream of Big Creek
6/24/2022 1:50:00 PM
River Mile: 8.60
Collection Method: Boat Electrofishing
Drainage Area: 745 square miles
0.50 km
IBI Type: Boat

85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	3.1750	Moderately Tolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	6	0.0420	--	0	--
Totals		150	34.9030		1	

*DELT anomalies were observed on = $\frac{0.6}{---}$ % of the fish collected
 Index of Biotic Integrity (IBI) = 36 (Marginally Good)
 Modified Index of Well-Being (MIwb) = 9.0 (Good)
 Shannon Diversity Index, no. 2.46
 Shannon Diversity Index, wt. 1.88
 N = 206
 B = 52.99



Cuyahoga River Upstream of Big Creek
8/16/2022 1:55:00 PM
River Mile: 8.60
Collection Method: Boat Electrofishing
Drainage Area: 745 square miles
0.50 km
IBI Type: Boat

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	10	1.60	--	0	--
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	1	0.0070	--	0	--
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	4	0.1250	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	2	0.0140	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	22	0.21	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	1	0.0020	Tolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	4	0.0150	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spottfin shiner	8	0.0280	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	81	0.13	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	6	0.0230	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	7	0.0170	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	41	0.0820	--	0	--
47-002	<i>Ictalurus punctatus</i> Channel catfish	3	1.0580	--	0	--
47-007	<i>Pylodictis olivaris</i> Flathead catfish	3	0.75	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	3	0.68	Moderately Intolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.0810	--	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.03	Tolerant	0	--



Cuyahoga River Upstream of Big Creek
8/16/2022 1:55:00 PM
River Mile: 8.60
Collection Method: Boat Electrofishing
Drainage Area: 745 square miles
0.50 km
IBI Type: Boat

80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.0050	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	2	0.0040	Moderately Intolerant	0	--
87-001	<i>Neogobius melanostomus</i> Round goby	6	0.0240	--	0	--
Totals		207	4.8850		0	

*DELT anomalies were observed on = 0 % of the fish collected

Index of Biotic Integrity (IBI) = 30 (Fair)

Modified Index of Well-Being (MIwb) = 8.0 (Fair)

Shannon Diversity Index, no. 2.07

Shannon Diversity Index, wt. 1.91

N = 340

B = 9.20