

**Cuyahoga River Upstream of Mill Creek**  
**September 6, 2019**  
**River Mile: 11.95**  
**Station ID: F99Q03**  
**Collection Method: Boat Electrofishing**  
**Drainage Area: 709 miles<sup>2</sup>**  
**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	103	2.2	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	1.97	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	3	0.62	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	1	0.011	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.018	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	2	4.536	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	2	0.018	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	17	0.08	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	5	0.025	Moderately Intolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	2	0.015	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	26	20.438	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.025	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	4	3.225	--	0	---
74-003	<i>Morone americana</i> White perch	2	0.047	--	0	---

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77-002	<i>Pomoxis nigromaculatus</i> Black crappie	1	0.11	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.28	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	6	1.16	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.028	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.09	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.062	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	1	0.004	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	5	2.378	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	23	0.165	--	0	---
Totals		<u>216</u>	<u>37.505</u>		<u>0</u>	

*DELT anomalies were observed on	0.00 % of the fish collected.
Index of Biotic Integrity (IBI) =	30 (Fair)
Modified Index of Well-Being (MIwb) =	8.7 (Marginally Good)
Shannon Diversity Index, no.	1.978
Shannon Diversity Index, wt.	1.622
N	374
B	65.43

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**Drainage Area: 709 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	2	0.04	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redbhorse	1	0.01	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	5	0.208	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	5	12.7	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	145	0.595	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	16	0.05	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	3	0.01	Moderately Intolerant	0	---
43-035	<i>Notropis volucellus</i> Mimic Shiner	1	0.004	Common Intolerant	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	3	3.175	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.03	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	1.3	--	0	---
74-003	<i>Morone americana</i> White perch	2	0.025	--	0	---
77-002	<i>Pomoxis nigromaculatus</i> Black crappie	3	0.47	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	7	1.887	Moderately Intolerant	0	---

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77-006	<i>Micropterus salmoides</i> Largemouth bass	3	0.09	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.01	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.015	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.015	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.04	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	1	0.004	Moderately Intolerant	0	---
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	1	0.002	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	1.73	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	19	0.085	--	0	---
Totals		<u>227</u>	<u>22.495</u>		<u>0</u>	

*DELT anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	36	(Marginally Good)
Modified Index of Well-Being (MIwb) =	7.5	(Fair)
Shannon Diversity Index, no.	1.582	
Shannon Diversity Index, wt.	1.509	
N	388	
B	18.87	

**Cuyahoga River Downstream of Mill Creek**

**September 6, 2019**

**River Mile: 11.30**

**Station ID: F01S10**

**Collection Method: Boat Electrofishing**

**Drainage Area: 730 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	5	0.76	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	3.629	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	0.95	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	6	2.676	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	15	4.076	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	14	0.1	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	1	3.856	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.006	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	1	0.004	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	10	0.053	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	7	0.031	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	41	0.14	Moderately Intolerant	0	---
43-039	<i>Ericymba buccata</i> Silverjaw minnow	2	0.008	--	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	6	0.008	Highly Tolerant	0	---

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**Station ID: F01S10**

43-044	<i>Camptostoma anomalum</i> Central stoneroller minnow	8	0.04	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	11	9.542	--	0	---
74-001	<i>Morone chrysops</i> White bass	3	0.02	--	0	---
74-003	<i>Morone americana</i> White perch	33	0.165	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	16	5.68	Moderately Intolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.098	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	8	0.07	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	6	0.03	--	0	---
	Totals	<u>199</u>	<u>31.942</u>		<u>0</u>	

*DELT anomalies were observed on	0.00 % of the fish collected.
Index of Biotic Integrity (IBI) =	38 (Marginally Good)
Modified Index of Well-Being (MIwb) =	9.4 (Very Good)
Shannon Diversity Index, no.	2.612
Shannon Diversity Index, wt.	1.978
N	274
B	55.55

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**Station ID: F01S10**

**Collection Method: Boat Electrofishing**

**Drainage Area: 730 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>DELT #</b>	<b>Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	46	0.85	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	4	7.234	--	0	---
40-005	<i>Carpoides cyprinus</i> Central quillback carpsucker	1	0.59	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	0.012	Moderately Intolerant	0	---
40-009	<i>Moxostoma duquesnei</i> Black redhorse	1	0.725	Common Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	10	5.095	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	6	4.1	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	4	0.74	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	9	0.034	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	90	0.32	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	14	0.05	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	1	0.006	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	2	0.01	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	10	0.08	--	0	---

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October 9, 2019

River Mile: 11.30

Station ID: F01S10

47-002	<i>Ictalurus punctatus</i> Channel catfish	14	14.979	--	0	---
74-001	<i>Morone chrysops</i> White bass	2	0.02	--	0	---
74-003	<i>Morone americana</i> White perch	2	0.012	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	10	5.1	Moderately Intolerant	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.025	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.085	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.03	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.04	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	5	5.543	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	2	0.015	--	0	---
Totals		<u>240</u>	<u>45.695</u>		<u>0</u>	

*DELT anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	42	(Good)
Modified Index of Well-Being (MIwb) =	9.4	(Very Good)
Shannon Diversity Index, no.	2.22	
Shannon Diversity Index, wt.	1.981	
N	440	
B	76.73	



**Cuyahoga River Upstream of Southerly WWTC**

**September 11, 2019**

**River Mile: 10.75**

**Station ID: F01A25**

**Collection Method: Boat Electrofishing**

**Drainage Area: 743 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	43	0.56	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	2.041	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	1.15	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	7	2.522	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	18	2.692	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	1	0.255	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	89	1.092	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	4	11.34	Highly Tolerant	0	---
43-005	<i>Nocomis micropogon</i> River Chub	1	0.005	Intolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	3	0.005	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	10	0.03	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	4	0.014	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	15	0.008	--	0	---
43-025	<i>Notropis chrysocephalus</i> Striped shiner	1	0.042	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**

**September 11, 2019**

**River Mile: 10.75**

**Station ID: F01A25**

43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	10	0.045	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	15	0.045	Moderately Intolerant	0	---
43-039	<i>Ericymba buccata</i> Silverjaw minnow	3	0.01	--	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	2	0.005	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	89	0.375	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	75	68.617	--	2	Lesion
74-003	<i>Morone americana</i> White perch	6	0.035	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	3	0.8	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.032	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.07	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	2	0.31	--	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	0.01	Moderately Intolerant	0	---
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	1	0.003	Moderately Intolerant	0	---
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	1	0.003	--	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	2.35	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	28	0.07	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**  
**September 11, 2019**  
**River Mile: 10.75**  
**Station ID: F01A25**

Totals	<u>449</u>	<u>94.646</u>	<u>2</u>
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*DELT anomalies were observed on	0.45	% of the fish collected.	
Index of Biotic Integrity (IBI) =	30	(Fair)	
Modified Index of Well-Being (MIwb) =	9.4	(Very Good)	
Shannon Diversity Index, no.	2.481		
Shannon Diversity Index, wt.	1.136		
N	614		
B	164.1		

**Cuyahoga River Upstream of Southerly WWTC**

**October 10, 2019**

**River Mile: 10.75**

**Station ID: F01A25**

**Collection Method: Boat Electrofishing**

**Drainage Area: 743 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>DELT #</b>	<b>Anomalies Description</b>
37-003	<i>Esox lucius</i> Northern pike	1	2.041	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	1	Moderately Intolerant	0	---
40-009	<i>Moxostoma duquesnei</i> Black redhorse	1	1.2	Common Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	3	0.086	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	1	0.125	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	29	1.4	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	4	9.587	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	8	0.01	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	2	0.005	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	1	0.01	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	42	0.042	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	6	0.013	Moderately Intolerant	0	---
43-035	<i>Notropis volucellus</i> Mimic Shiner	2	0.005	Common Intolerant	0	---
43-039	<i>Ericymba buccata</i> Silverjaw minnow	1	0.002	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**

**October 10, 2019**

**River Mile: 10.75**

**Station ID: F01A25**

43-042	<i>Pimephales promelas</i> Northern fathead minnow	1	0.002	Highly Tolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	20	0.028	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	23	0.092	--	0	---
43-047	<i>Ctenopharyngodon idella</i> Grass carp	1	8.618	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	18	8.648	--	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	0.58	--	0	---
47-008	<i>Noturus flavus</i> Stonecat Madtom	1	0.031	Intolerant	0	---
74-001	<i>Morone chrysops</i> White bass	3	0.04	--	0	---
74-003	<i>Morone americana</i> White perch	3	0.015	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	8	4.092	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	2	0.038	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.015	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	3	0.055	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	2	0.11	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	2	0.012	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	1.134	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	16	0.08	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**

**October 10, 2019**

**River Mile: 10.75**

**Station ID: F01A25**

Totals	<u>208</u>	<u>39.116</u>	<u>0</u>
*DELT anomalies were observed on	0.00	% of the fish collected.	
Index of Biotic Integrity (IBI) =	34	(Fair)	
Modified Index of Well-Being (MIwb) =	9.3	(Very Good)	
Shannon Diversity Index, no.	2.68		
Shannon Diversity Index, wt.	2.022		
N	250		
B	38.72		

**Cuyahoga River Downstream of Southerly WWTC**

**September 11, 2019**

**River Mile: 10.10**

**Station ID: F99Q02**

**Collection Method: Boat Electrofishing**

**Drainage Area: 744 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	2	0.41	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	1.814	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	2	3.114	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	1.134	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	14	1.406	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.004	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	4	5.443	Highly Tolerant	0	---
43-002	<i>Carassius auratus</i> Goldfish	1	0.005	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	1	0.002	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	4	0.015	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	7	0.03	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	8	0.02	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	10	0.04	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	2	0.006	Moderately Intolerant	0	---

**Cuyahoga River Downstream of Southerly WWTC**

**September 11, 2019**

**River Mile: 10.10**

**Station ID: F99Q02**

43-042	<i>Pimephales promelas</i> Northern fathead minnow	1	0.002	Highly Tolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	1	0.004	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	18	0.09	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	40	47.915	--	1	Erosion
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	7	3.864	--	0	---
74-001	<i>Morone chrysops</i> White bass	3	0.3	--	0	---
74-003	<i>Morone americana</i> White perch	4	0.112	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	7	1.54	Moderately Intolerant	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.02	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.165	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.53	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.04	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	2	0.008	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	6	4.807	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	3	0.018	--	0	---
	<b>Totals</b>	<u>157</u>	<u>72.858</u>		<u>1</u>	

\*DELT anomalies were observed on 0.64 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 40 (Good)  
 Modified Index of Well-Being (MIwb) = 9.4 (Very Good)



**Cuyahoga River Downstream of Southerly WWTC  
September 11, 2019**

**River Mile: 10.10**

**Station ID: F99Q02**

Shannon Diversity Index, no.	2.755
Shannon Diversity Index, wt.	1.397
N	272
B	134.5

**Cuyahoga River Downstream of Southerly WWTC**

**October 10, 2019**

**River Mile: 10.10**

**Station ID: F99Q02**

**Collection Method: Boat Electrofishing**

**Drainage Area: 744 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>DELT #</b>	<b>Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	3	1.3	--	0	---
40-005	<i>Carpionodes cyprinus</i> Central quillback carpsucker	3	2.85	--	0	---
40-009	<i>Moxostoma duquesnei</i> Black redhorse	1	0.585	Common Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.9	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	9	4.75	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	2	0.92	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	8	1.5	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	3	7.031	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	4	0.013	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	108	0.352	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	6	0.022	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	8	0.041	Moderately Intolerant	0	---
43-042	<i>Pimephales promelas</i> Northern fathead minnow	1	0.004	Highly Tolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	2	0.005	Highly Tolerant	0	---

**Cuyahoga River Downstream of Southerly WWTC**

**October 10, 2019**

**River Mile: 10.10**

**Station ID: F99Q02**

43-047	<i>Ctenophargngodon idella</i> Grass carp	1	10.886	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	33	33.452	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.05	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	3	4.082	--	0	---
47-008	<i>Noturus flavus</i> Stonecat Madtom	1	0.085	Intolerant	0	---
74-003	<i>Morone americana</i> White perch	1	0.03	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	6	0.63	Moderately Intolerant	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	5	0.15	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.13	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.098	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	2	0.06	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	4	0.35	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	9	0.04	--	0	---
Totals		<u>227</u>	<u>70.316</u>		<u>0</u>	

*DELTA anomalies were observed on	0.00 % of the fish collected.
Index of Biotic Integrity (IBI) =	42 (Good)
Modified Index of Well-Being (MIwb) =	9.2 (Very Good)
Shannon Diversity Index, no.	2.113
Shannon Diversity Index, wt.	1.824
N	384
B	101.2

**Cuyahoga River Upstream of Big Creek**

**September 24, 2019**

**River Mile: 8.60**

**Station ID: 20025**

**Collection Method: Boat Electrofishing**

**Drainage Area: 745 miles<sup>2</sup>**

**Collection Distance: 0.5 km**

<b>Code</b>	<b>Species</b>	<b>Number</b>	<b>Weight (kg)</b>	<b>Pollution Tolerance</b>	<b>#</b>	<b>DELT Anomalies Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	144	1.53	--	0	---
40-009	<i>Moxostoma duquesnei</i> Black redhorse	2	1.33	Common Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	5	0.9	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	32	2.36	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	3	0.46	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	18	0.14	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	4	15.422	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.015	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	35	0.142	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	6	0.035	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	28	0.05	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	12	0.035	Moderately Intolerant	0	---
43-035	<i>Notropis volucellus</i> Mimic Shiner	21	0.062	Common Intolerant	0	---
43-039	<i>Ericymba buccata</i> Silverjaw minnow	1	0.008	--	0	---

**Cuyahoga River Upstream of Big Creek**

**September 24, 2019**

**River Mile: 8.60**

**Station ID: 20025**

43-042	<i>Pimephales promelas</i> Northern fathead minnow	1	0.006	Highly Tolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	21	0.03	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	196	1.05	--	1	Deformity
47-002	<i>Ictalurus punctatus</i> Channel catfish	36	27.399	--	0	---
74-003	<i>Morone americana</i> White perch	26	0.2	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	1	0.8	Moderately Intolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.08	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	20	0.19	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	5	7.711	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	49	0.21	--	0	---
Totals		<u>670</u>	<u>60.165</u>		<u>1</u>	

*DELT anomalies were observed on	0.15 % of the fish collected.
Index of Biotic Integrity (IBI) =	32 (Fair)
Modified Index of Well-Being (MIwb) =	9.7 (Exceptional)
Shannon Diversity Index, no.	2.339
Shannon Diversity Index, wt.	1.627
N	1098
B	88.28