

**Cuyahoga River Upstream of Southerly WWTC**

**September 9, 2015**

**River Mile: 10.75**

**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	27	0.41	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	3.629	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	13	7.991	Moderately Intolerant	1	Lesion
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	5	1.72	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	12	3.77	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	17	1.083	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	14	44.906	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Western blacknose dace	1	0.002	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	14	0.058	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	8	0.125	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	8	0.03	--	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	17	0.05	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	15	12.348	--	2	Multiple
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.048	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	1.814	--	0	---

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**September 9, 2015**

**River Mile: 10.75**

74-003	<i>Morone americana</i> White perch	6	0.305	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.3	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	8	1.98	Moderately Intolerant	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.1	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	7	0.3	Moderately Tolerant	0	---
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.02	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.035	--	0	---
80-003	<i>Perca flavescens</i> Yellow perch	3	0.024	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	8	0.1	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	4	3.52	Moderately Tolerant	1	Tumor
87-001	<i>Neogobius melanostomus</i> Round goby	2	0.018	--	0	---
Totals		<u>197</u>	<u>84.690</u>		<u>4</u>	

*DELTA anomalies were observed on	2.03	% of the fish collected.
Index of Biotic Integrity (IBI) =	34	(Fair)
Modified Index of Well-Being (MIwb) =	9.6	(Exceptional)
Shannon Diversity Index, no.	2.886	
Shannon Diversity Index, wt.	1.689	
N	310	
B	76.46	

**Cuyahoga River Upstream of Southerly WWTC**

**October 14, 2015**

**River Mile: 10.75**

**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	177	2.5	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	1.7	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	2	1.68	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	4	3.08	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	7	2.18	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	26	2.17	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Western blacknose dace	1	0.002	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	362	2.24	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	4	0.17	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	1	0.002	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	1	0.001	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	14	0.1	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	7	5.67	--	0	---
47-005	<i>Ictalurus nebulosus</i> Brown bullhead	1	0.02	Highly Tolerant	0	---
74-003	<i>Morone americana</i> White perch	3	0.2	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**

**October 14, 2015**

**River Mile: 10.75**

77-004	<i>Micropterus dolomieu</i> Smallmouth bass	5	0.67	Moderately Intolerant	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	2	0.035	Highly Tolerant	0	---
77-016	<i>HYBRID</i> Green SF X Pumpkinseed	1	0.06	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.01	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	1	0.006	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	6	0.05	--	0	---
	<b>Totals</b>	<u><u>627</u></u>	<u><u>22.546</u></u>		<u><u>0</u></u>	

*DELT anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	32	(Fair)
Modified Index of Well-Being (MIwb) =	8.9	(Good)
Shannon Diversity Index, no.	1.283	
Shannon Diversity Index, wt.	2.193	
N	1172	
B	40.02	

**Cuyahoga River Downstream of Southerly WWTC**

**September 9, 2015**

**River Mile: 10.10**

**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	58	1.8	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	2.041	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	1.9	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	3.1	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	10	6.42	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	8	1.44	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	20	2.737	Highly Tolerant	2	Lesion
43-001	<i>Cyprinus carpio</i> Common carp	13	31.298	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	8	0.03	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	1	0.001	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	1	0.004	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	5	0.015	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	1	0.008	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	2	0.01	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	14	13.393	--	1	Erosion

**Cuyahoga River Downstream of Southerly WWTC  
September 9, 2015**

**River Mile: 10.10**

47-007	<i>Pylodictis olivaris</i> Flathead Catfish	2	1.5	--	0	---
74-001	<i>Morone chrysops</i> White bass	1	0.65	--	0	---
74-003	<i>Morone americana</i> White perch	3	0.16	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	9	4.495	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.02	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.125	Moderately Tolerant	0	---
80-002	<i>Sander vitreus</i> Walleye	1	0.06	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.015	Moderately Intolerant	0	---
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	1	0.001	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.027	--	0	---
Totals		<u>172</u>	<u>71.250</u>		<u>3</u>	

*DELTA anomalies were observed on	1.74	% of the fish collected.
Index of Biotic Integrity (IBI) =	30	(Fair)
Modified Index of Well-Being (MIwb) =	9.2	(Very Good)
Shannon Diversity Index, no.	2.424	
Shannon Diversity Index, wt.	1.869	
N	262	
B	74.04	

**Cuyahoga River Downstream of Southerly WWTC**  
**October 14, 2015**  
**River Mile: 10.10**  
**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	178	3.05	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	1	1.5	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	3	4.43	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	3	2.45	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	3	2.8	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	2	0.03	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	7	2.445	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	44	0.138	--	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	1	0.001	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	29	20.193	--	2	Erosion & Lesior
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	1.42	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	10	4.3	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.05	--	0	---
80-003	<i>Perca flavescens</i> Yellow perch	1	0.02	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.01	Moderately Intolerant	0	---

**Cuyahoga River Downstream of Southerly WWTC**

**October 14, 2015**

**River Mile: 10.10**

85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	3.175	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	2	0.025	--	0	---
	Totals	<u>289</u>	<u>46.037</u>		<u>2</u>	

*DELT anomalies were observed on	0.69 % of the fish collected.
Index of Biotic Integrity (IBI) =	26 (Fair)
Modified Index of Well-Being (MIwb) =	8.7 (Marginally Good)
Shannon Diversity Index, no.	1.385
Shannon Diversity Index, wt.	1.913
N	558
B	84.13



**Cuyahoga River Upstream of Big Creek**  
**October 13, 2015**  
**River Mile: 8.60**  
**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	361	4.8	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	4	3.585	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.015	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	2	1.23	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	8	1.845	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	8	1.03	Highly Tolerant	0	---
43-011	<i>Rhinichthys atratulus</i> Western blacknose dace	1	0.01	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	3	0.018	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	646	1.81	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	1	0.004	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	14	0.059	Moderately Intolerant	0	---
43-042	<i>Pimephales promelas</i> Northern fathead minnow	2	0.014	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	4	0.055	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	28	30.77	--	2	Erosion & lesion
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.155	Highly Tolerant	0	---

**Cuyahoga River Upstream of Big Creek  
October 13, 2015**

		<b>River Mile:</b>	<b>8.60</b>			
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	8	4.35	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.03	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.01	Highly Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.015	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	3.01	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	39	0.157	--	0	---
Totals		<u>1136</u>	<u>52.972</u>		<u>2</u>	

\*DELT anomalies were observed on 0.18 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 32 (Fair)  
 Modified Index of Well-Being (MIwb) = 8.8 (Good)  
 Shannon Diversity Index, no. 1.184  
 Shannon Diversity Index, wt. 1.547  
 N 2154  
 B 95.99

**Cuyahoga River Downstream of Big Creek**

**August 6, 2015**

**River Mile: 7.00**

**Collection Method: Boat Electrofishing**

**Drainage Area: 786 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	0.385	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	2.92	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	4	2.62	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	2	0.499	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	4	2.5	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	2	11.793	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	2	0.012	--	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	1	0.003	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	2	1.803	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	7	2.4	Moderately Intolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.06	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.03	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	3	0.015	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	1	0.003	--	0	---
	<b>Totals</b>	<u>140</u>	<u>25.043</u>		<u>0</u>	

## Cuyahoga River Downstream of Big Creek

August 6, 2015

River Mile: 7.00

*DELT anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	28	(Fair)
Modified Index of Well-Being (MIwb) =	7.2	(Fair)
Shannon Diversity Index, no.	1.219	
Shannon Diversity Index, wt.	1.661	
N	266	
B	21.49	

**Cuyahoga River Downstream of Big Creek**

**September 23, 2015**

**River Mile: 7.00**

**Collection Method: Boat Electrofishing**

**Drainage Area: 786 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	225	1.9	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	1.701	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	1.8	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	1.052	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	1	0.85	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	4	0.41	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	5	0.215	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	1	0.01	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	11	0.043	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	3	0.012	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	1	0.004	--	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	1	0.002	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	2	0.026	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	7	6.405	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.006	Highly Tolerant	0	---

**Cuyahoga River Downstream of Big Creek  
September 23, 2015**

		River Mile:	7.00			
74-001	<i>Morone chrysops</i> White bass	1	0.02	--	0	---
74-003	<i>Morone americana</i> White perch	2	0.02	--	0	---
77-001	<i>Pomoxis annularis</i> White crappie	1	0.15	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	9	4.485	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	5	0.34	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	3	0.048	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.01	Moderately Tolerant	0	---
80-003	<i>Perca flavescens</i> Yellow perch	3	0.05	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.01	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	18	0.14	--	0	---
Totals		<u>313</u>	<u>19.709</u>		<u>0</u>	

\*DELTA anomalies were observed on 0.00 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 34 (Fair)  
 Modified Index of Well-Being (MIwb) = 8.4 (Marginally Good)  
 Shannon Diversity Index, no. 1.364  
 Shannon Diversity Index, wt. 2.009  
 N 564  
 B 38.54

**Cuyahoga River at Head of Navigation Channel**

**August 6, 2015**

**River Mile: 5.90**

**Collection Method: Boat Electrofishing**

**Drainage Area: 787 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	12	0.2	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	3.62	--	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	7	0.032	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	19	78.31	Highly Tolerant	2	Deformity/Lesior
43-013	<i>Semotilus atromaculatus</i> Creek chub	1	0.004	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	4	0.04	--	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	1	0.004	--	0	---
43-047	<i>Ctenopharyngodon idella</i> Grass carp	1	9.96	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	1	0.024	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	0.204	Highly Tolerant	2	Lesion
74-003	<i>Morone americana</i> White perch	6	0.024	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	2	0.57	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	3	0.04	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	7	0.028	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.01	Moderately Tolerant	0	---

**Cuyahoga River at Head of Navigation Channel**

**August 6, 2015**

**River Mile: 5.90**

80-003	<i>Perca flavescens</i> Yellow perch	1	0.08	--	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	3	0.24	--	0	---
	Totals	<u>73</u>	<u>93.390</u>		<u>4</u>	

*DELT anomalies were observed on	5.48	% of the fish collected.
Index of Biotic Integrity (IBI) =	18	(Poor)
Modified Index of Well-Being (MIwb) =	6.1	(Poor)
Shannon Diversity Index, no.	2.372	
Shannon Diversity Index, wt.	0.609	
N	54	
B	9.176	



**Cuyahoga River at Head of Navigation Channel**

**September 23, 2015**

**River Mile: 5.90**

**Collection Method: Boat Electrofishing**

**Drainage Area: 787 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	509	4.07	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	1	2.041	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.825	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	5	0.023	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	2	9.072	Highly Tolerant	1	Deformity
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	3	0.012	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	2	0.005	Moderately Intolerant	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.025	Highly Tolerant	0	---
74-003	<i>Morone americana</i> White perch	1	0.01	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	2	1.65	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	6	0.47	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	8	0.052	Highly Tolerant	0	---
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.015	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.037	--	0	---
	<b>Totals</b>	<u><b>546</b></u>	<u><b>18.307</b></u>		<u><b>1</b></u>	

**Cuyahoga River at Head of Navigation Channel  
September 23, 2015**

**River Mile: 5.90**

*DELTA anomalies were observed on	0.18	% of the fish collected.
Index of Biotic Integrity (IBI) =	30	(Fair)
Modified Index of Well-Being (MIwb) =	6.8	(Fair)
Shannon Diversity Index, no.	0.404	
Shannon Diversity Index, wt.	1.441	
N	1050	
B	18.18	

**Cuyahoga River at Restoration Site**  
**July 31, 2015**  
**River Mile: 2.75**  
**Collection Method: Boat Electrofishing**  
**Drainage Area: 806 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	42	0.748	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	1	--	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	1	0.07	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.001	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	19	34.1	Highly Tolerant	3	Multiple
43-002	<i>Carassius auratus</i> Goldfish	3	0.9	Highly Tolerant	0	---
43-003	<i>Notemigonus crysoleucas</i> Golden shiner	4	0.152	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	78	0.154	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	5	6.22	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	4	1.74	Highly Tolerant	3	Multiple
74-003	<i>Morone americana</i> White perch	3	0.01	--	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	13	0.324	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.03	Highly Tolerant	1	Lesion
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	4	0.402	Moderately Tolerant	0	---
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	4	0.064	Moderately Tolerant	0	---

**Cuyahoga River at Restoration Site  
July 31, 2015**

80-003	<i>Perca flavescens</i> Yellow perch	River Mile: 1	2.75 0.01	--	0	---
	Totals	<u>184</u>	<u>45.925</u>		<u>7</u>	

\*DELT anomalies were observed on 3.80 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 24 (Poor)  
 Modified Index of Well-Being (MIwb) = 7.1 (Fair)  
 Shannon Diversity Index, no. 1.83  
 Shannon Diversity Index, wt. 0.985  
 N 298  
 B 17.98

**Cuyahoga River at Restoration Area**  
**October 8, 2015**  
**River Mile: 2.75**  
**Collection Method: Boat Electrofishing**  
**Drainage Area: 806 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	119	1.01	--	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.02	Highly Tolerant	0	---
40-018	<i>Minytrema melanops</i> Spotted Sucker	1	1.4	--	0	---
43-001	<i>Cyprinus carpio</i> Common carp	13	23.106	Highly Tolerant	0	---
43-002	<i>Carassius auratus</i> Goldfish	1	0.65	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	145	0.295	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	1	2.268	--	1	Erosion
74-003	<i>Morone americana</i> White perch	2	0.02	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	2	0.77	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	2	0.62	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	21	4	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.062	Highly Tolerant	0	---
80-003	<i>Perca flavescens</i> Yellow perch	4	0.05	--	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.02	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	0.453	Moderately Tolerant	0	---

**Cuyahoga River at Restoration Area**

**October 8, 2015**

**River Mile: 2.75**

Totals

315

34.744

1

\*DELT anomalies were observed on 0.32 % of the fish collected.  
Index of Biotic Integrity (IBI) = 32 (Fair)  
Modified Index of Well-Being (MIwb) = 7.3 (Fair)  
Shannon Diversity Index, no. 1.317  
Shannon Diversity Index, wt. 1.292  
N 594  
B 21.77

**Cuyahoga River Upstream of Confluence with Lake Erie**  
**July 31, 2015**  
**River Mile: 0.20**  
**Collection Method: Boat Electrofishing**  
**Drainage Area: 813 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	94	0.402	--	0	---
43-001	<i>Cyprinus carpio</i> Common carp	3	9.072	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	38	0.04	--	0	---
74-001	<i>Morone chrysops</i> White bass	4	1.367	--	0	---
74-003	<i>Morone americana</i> White perch	1	0.454	--	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	4	3.298	--	0	---
<b>Totals</b>		<u><u>144</u></u>	<u><u>14.633</u></u>		<u><u>0</u></u>	

\*DELT anomalies were observed on 0.00 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 24 (Poor)  
 Modified Index of Well-Being (MIwb) = 6.0 (Poor)  
 Shannon Diversity Index, no. 0.944  
 Shannon Diversity Index, wt. 1.076  
 N 280  
 B 10.21

**Cuyahoga River Upstream of Confluence with Lake Erie**

**October 8, 2015**

**River Mile: 0.20**

**Collection Method: Boat Electrofishing**

**Drainage Area: 813 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	376	4.974	--	2	Erosion
43-001	<i>Cyprinus carpio</i> Common carp	5	14.969	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	25	0.053	--	0	---
70-001	<i>Labidesthes sicculus</i> Brook silverside	1	0.01	Moderately Intolerant	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.112	--	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	14	4.419	--	0	---
<b>Totals</b>		<u><b>422</b></u>	<u><b>24.537</b></u>		<u><b>2</b></u>	

\*DELT anomalies were observed on 0.47 % of the fish collected.

Index of Biotic Integrity (IBI) = 24 (Poor)

Modified Index of Well-Being (MIwb) = 6.3 (Poor)

Shannon Diversity Index, no. 0.464

Shannon Diversity Index, wt. 0.975

N 834

B 19.14