

**Cuyahoga River Upstream of Mill Creek**  
**July 21, 2014**  
**River Mile: 11.95**  
**Collection Method: Boat Electroshocking**  
**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>
15-001	<i>Amia calva</i> Bowfin	1	1.3	--	0	---
40-005	<i>Carpiodes cyprinus</i> Central quillback carpsucker	1	0.7	--	0	---
40-008	<i>Moxostoma anisurum</i> Silver Redhorse	1	1.45	Moderately Intolerant	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	5	3.48	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	2	0.25	Moderately Intolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	2	2.9	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	28	0.075	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	3	0.025	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	2	1.415	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.07	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	0.475	--	0	---
74-001	<i>Morone chrysops</i> White bass	2	0.41	--	0	---
74-003	<i>Morone americana</i> White perch	1	0.105	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	3	0.8	Moderately Intolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.035	Moderately Tolerant	0	---

**Cuyahoga River Upstream of Mill Creek**

**July 21, 2014**

**River Mile: 11.95**

80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.004	Moderately Intolerant	0	---
--------	---	---	-------	--------------------------	---	-----

Totals	<u>55</u>	<u>13.494</u>		<u>0</u>	
--------	-----------	---------------	--	----------	--

*DELTA anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	36	(Marginally Good)
Modified Index of Well-Being (MIwb) =	7.9	(Fair)
Shannon Diversity Index, no.	1.944	
Shannon Diversity Index, wt.	2.124	
N	102	
B	20.84	

**Cuyahoga River Upstream of Mill Creek**  
**September 29, 2014**  
**River Mile: 11.95**  
**Collection Method: Boat Electroshocking**  
**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>
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	4	3.714	--	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	2	1.238	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	4	1	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.75	Highly Tolerant	1	Lesion
43-001	<i>Cyprinus carpio</i> Common carp	2	2.948	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	12	0.064	--	0	---
43-025	<i>Notropis chrysocephalus</i> Striped shiner	35	0.082	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	8	0.056	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	1	0.004	Moderately Intolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	1	0.03	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	12	6.74	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	4	0.5	Highly Tolerant	0	---
47-007	<i>Pygodictis olivaris</i> Flathead Catfish	1	1.75	--	0	---
77-001	<i>Pomoxis annularis</i> White crappie	2	0.41	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	2	0.26	--	0	---

**Cuyahoga River Upstream of Mill Creek**

**September 29, 2014**

**River Mile: 11.95**

77-004	<i>Micropterus dolomieu</i> Smallmouth bass	30	3.764	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.2	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.015	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	2	0.074	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.022	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	1.5	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	2	0.03	--	0	---
77-012	<i>Lepomis microlophus</i> Redear Sunfish	1	0.145	--	0	---
Totals		<u>130</u>	<u>25.296</u>		<u>1</u>	

*DELT anomalies were observed on	0.77	% of the fish collected.
Index of Biotic Integrity (IBI) =	44	(Very Good)
Modified Index of Well-Being (MIwb) =	9.1	(Good)
Shannon Diversity Index, no.	2.347	
Shannon Diversity Index, wt.	2.252	
N	230	
B	34.39	

**Cuyahoga River Downstream of Mill Creek**  
**September 29, 2014**  
**River Mile: 11.30**  
**Collection Method: Boat Electroshocking**  
**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	1	0.55	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	3	2.722	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	3	1.055	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	8	3.71	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	16	3.637	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	8	3.1	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	21	0.088	--	0	---
43-025	<i>Notropis chrysocephalus</i> Striped shiner	68	0.182	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	3	0.03	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	30	0.056	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	11	0.02	Highly Tolerant	1	Lesion
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	24	0.055	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	6	5.95	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.15	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	25	4.225	Moderately Intolerant	0	---

**Cuyahoga River Downstream of Mill Creek**

**September 29, 2014**

**River Mile: 11.30**

77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	3	0.13	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.04	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	3	0.035	--	0	---
	Totals	<u>237</u>	<u>25.735</u>		<u>1</u>	

*DELT anomalies were observed on	0.42	% of the fish collected.
Index of Biotic Integrity (IBI) =	42	(Good)
Modified Index of Well-Being (MIwb) =	9.3	(Very Good)
Shannon Diversity Index, no.	2.328	
Shannon Diversity Index, wt.	2.067	
N	424	
B	39.72	

**Cuyahoga River Upstream of Southerly WWTC**  
**September 25, 2014**  
**River Mile: 10.75**  
**Collection Method: Boat Electroshocking**  
**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	1	0.02	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	1	1.5	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	3	1.5	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	3	0.5	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	22	3.8	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	10	3.02	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	11	38.1	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	35	0.145	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	40	0.16	--	0	---
43-025	<i>Notropis chrysocephalus</i> Striped shiner	10	0.032	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	8	0.06	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	14	0.03	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	13	0.026	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	8	0.07	--	0	---
43-047	<i>Ctenophargngodon idella</i> Grass carp	1	9.072	--	0	---

**Cuyahoga River Upstream of Southerly WWTC**

**September 25, 2014**

**River Mile: 10.75**

47-002	<i>Ictalurus punctatus</i> Channel catfish	9	5.675	--	1	Erosion
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	0.15	Highly Tolerant	0	---
74-003	<i>Morone americana</i> White perch	2	0.18	--	0	---
77-001	<i>Pomoxis annularis</i> White crappie	1	0.08	--	0	---
77-003	<i>Ambloplites rupestris</i> Northern rockbass	2	0.215	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	15	2.25	Moderately Intolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	4	0.052	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	1.395	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.03	--	0	---
Totals		<u>221</u>	<u>68.062</u>		<u>1</u>	

*DELT anomalies were observed on	0.45 % of the fish collected.
Index of Biotic Integrity (IBI) =	38 (Marginally Good)
Modified Index of Well-Being (MIwb) =	9.0 (Good)
Shannon Diversity Index, no.	2.685
Shannon Diversity Index, wt.	1.614
N	354
B	31.97



**Cuyahoga River Downstream of Southerly WWTC**  
**September 25, 2014**  
**River Mile: 10.10**  
**Collection Method: Boat Electroshocking**  
**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>
37-003	<i>Esox lucius</i> Northern pike	1	2.722	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	4	2.106	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	5	2.1	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	12	1.3	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	11	4.405	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	3	9.072	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	39	0.176	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	11	0.045	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	4	0.035	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	2	0.005	Moderately Intolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	4	0.005	Highly Tolerant	0	---
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	1	0.004	--	0	---
43-047	<i>Ctenopharyngodon idella</i> Grass carp	1	3.629	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	9	5.75	--	1	Erosion
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	0.12	Highly Tolerant	1	Erosion

### Cuyahoga River Downstream of Southerly WWTC

September 25, 2014

River Mile: 10.10

47-008	<i>Noturus flavus</i> Stonecat Madtom	1	0.005	Intolerant	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	32	7.62	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	4	0.15	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	6	0.08	Moderately Intolerant	0	---
80-015	<i>Etheostoma blenniodes</i> Greenside darter	1	0.003	Moderately Intolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	3	2.85	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.07	--	0	---
Totals		<u>161</u>	<u>42.272</u>		<u>2</u>	

*DELT anomalies were observed on	1.24	% of the fish collected.
Index of Biotic Integrity (IBI) =	40	(Good)
Modified Index of Well-Being (MIwb) =	9.5	(Very Good)
Shannon Diversity Index, no.	2.522	
Shannon Diversity Index, wt.	2.224	
N	270	
B	49.9	

**Cuyahoga River Upstream of Big Creek**  
**September 25, 2014**  
**River Mile: 8.60**  
**Collection Method: Boat Electroshocking**  
**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>DELT #</b>	<b>Anomalies Description</b>
40-010	<i>Moxostoma erythrurum</i> Golden redbhorse	1	0.66	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redbhorse	9	2.83	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	21	3.37	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.05	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	32	0.4	--	0	---
43-026	<i>Notropis cornutus</i> Common shiner	1	0.006	--	0	---
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	2	0.015	--	0	---
43-034	<i>Notropis stramineus</i> Sand shiner	2	0.005	Moderately Intolerant	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	0.01	--	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	5	4.685	--	3	Erosion
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	4	1.04	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.27	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.4	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.03	Moderately Intolerant	0	---

**Cuyahoga River Upstream of Big Creek**

**September 25, 2014**

**River Mile: 8.60**

85-001	<i>Aplodinotus grunniens</i> Freshwater drum	1	0.26	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	4	0.03	--	0	---
77-012	<i>Lepomis microlophus</i> Redear Sunfish	1	0.13	--	0	---
	Totals	<u>92</u>	<u>14.193</u>		<u>3</u>	

*DELT anomalies were observed on	3.26	% of the fish collected.
Index of Biotic Integrity (IBI) =	34	(Fair)
Modified Index of Well-Being (MIwb) =	8.2	(Fair)
Shannon Diversity Index, no.	2.117	
Shannon Diversity Index, wt.	1.821	
N	170	
B	27.96	

**Cuyahoga River Downstream of Big Creek**

**September 29, 2014**

**River Mile: 7.00**

**Collection Method: Boat Electroshocking**

**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>DELT # Anomalies</b>	<b>Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	5	3.1	--	0	---
25-002	<i>Oncorhynchus mykiss</i> Rainbow trout	3	5.75	--	0	---
40-010	<i>Moxostoma erythrum</i> Golden redhorse	1	0.35	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	1	0.9	Moderately Intolerant	0	---
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	7	0.15	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	6	3.05	Highly Tolerant	0	---
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.005	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	3	0.035	--	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	2	0.02	Highly Tolerant	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.09	Highly Tolerant	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	12	4.225	Moderately Intolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	4	0.03	Moderately Tolerant	0	---
80-011	<i>Percina caprodes</i> Northern logperch darter	3	0.035	Moderately Intolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	11	0.16	--	0	---
	<b>Totals</b>	<u><b>61</b></u>	<u><b>17.900</b></u>		<u><b>0</b></u>	

## Cuyahoga River Downstream of Big Creek

September 29, 2014

River Mile: 7.00

*DELTA anomalies were observed on	0.00	% of the fish collected.
Index of Biotic Integrity (IBI) =	32	(Fair)
Modified Index of Well-Being (MIwb) =	7.6	(Fair)
Shannon Diversity Index, no.	2.36	
Shannon Diversity Index, wt.	1.692	
N	72	
B	17.65	

**Cuyahoga River at Head of Navigation Channel**

**July 18, 2014**

**River Mile: 5.90**

**Collection Method: Boat Electroshocking**

**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>DELT Anomalies #</b>	<b>Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	32	10.65	--	0	---
37-003	<i>Esox lucius</i> Northern pike	1	0.05	--	0	---
40-004	<i>Ictiobus bubalus</i> Smallmouth buffalo	2	8.546	--	0	---
40-010	<i>Moxostoma erythrum</i> Golden rehorse	2	0.54	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	1	0.48	Highly Tolerant	0	---
40-018	<i>Minytrema melanops</i> Spotted Sucker	1	0.8	--	0	---
43-001	<i>Cyprinus carpio</i> Common carp	8	34.586	Highly Tolerant	1	Deformity
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	17	0.043	--	0	---
43-047	<i>Ctenopharyngodon idella</i> Grass carp	1	12	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	1	0.5	Moderately Intolerant	0	---
<b>Totals</b>		<u><b>66</b></u>	<u><b>68.195</b></u>		<u><b>1</b></u>	

\*DELT anomalies were observed on 2.94 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 11 (Very Poor)  
 Modified Index of Well-Being (MIwb) = 7.1 (Fair)  
 Shannon Diversity Index, no. 1.485  
 Shannon Diversity Index, wt. 1.372  
 N 112  
 B 42.26

**Cuyahoga River at Head of Navigation Channel**

**October 6, 2014**

**River Mile: 5.90**

**Collection Method: Boat Electroshocking**

**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	5	0.09	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	2	1.95	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	4	2.06	Highly Tolerant	0	---
43-001	<i>Cyprinus carpio</i> Common carp	19	92.986	Highly Tolerant	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	5	11.702	--	2	Deformity & Erosion
74-003	<i>Morone americana</i> White perch	5	0.05	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	8	4.26	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.015	--	0	---
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.063	Highly Tolerant	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.065	Moderately Tolerant	0	---
87-001	<i>Neogobius melanostomus</i> Round goby	3	0.015	--	0	---
<b>Totals</b>		<u><b>54</b></u>	<u><b>113.256</b></u>		<u><b>2</b></u>	

\*DELT anomalies were observed on 4.08 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 11 (Very Poor)  
 Modified Index of Well-Being (MIwb) = 6.4 (Poor)  
 Shannon Diversity Index, no. 2.008  
 Shannon Diversity Index, wt. 0.683  
 N 44  
 B 36.16



**Cuyahoga River at Restoration Area**  
**October 10, 2014**  
**River Mile: 2.75**  
**Collection Method: Boat Electroshocking**  
**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>DELT Anomalies #</b>	<b>Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	254	4.2	--	0	---
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	1	0.085	Moderately Intolerant	0	---
40-011	<i>Moxostoma macrolepidotum</i> Shorthead redhorse	1	0.01	Moderately Intolerant	0	---
40-016	<i>Catostomus commersonii</i> Common white sucker	6	1.1	Highly Tolerant	0	---
40-018	<i>Minytrema melanops</i> Spotted Sucker	1	1	--	0	---
43-001	<i>Cyprinus carpio</i> Common carp	12	28.701	Highly Tolerant	0	---
43-002	<i>Carassius auratus</i> Goldfish	8	5.294	Highly Tolerant	1	Tumor
43-003	<i>Notemigonus crysoleucas</i> Golden shiner	3	0.07	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	255	0.566	--	0	---
43-042	<i>Pimephales promelas</i> Northern fathead minnow	3	0.012	Highly Tolerant	0	---
43-043	<i>Pimephales notatus</i> Bluntnose minnow	9	0.031	Highly Tolerant	0	---
43-045	<i>HYBRID</i> Common Carp x Goldfish	1	1.1	Highly Tolerant	0	---
47-002	<i>Ictalurus punctatus</i> Channel catfish	19	20.035	--	1	Deformity
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.575	Highly Tolerant	1	Lesion
74-003	<i>Morone americana</i> White perch	140	1.326	--	0	---

**Cuyahoga River at Restoration Area**

**October 10, 2014**

**River Mile: 2.75**

77-003	<i>Ambloplites rupestris</i> Northern rockbass	3	0.59	--	1	Lesion
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	1	0.26	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	12	0.678	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	3	0.175	Moderately Tolerant	0	---
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	5	0.26	Moderately Tolerant	0	---
80-003	<i>Perca flavescens</i> Yellow perch	1	0.018	--	0	---
Totals		<u>739</u>	<u>66.086</u>		<u>4</u>	

*DELT anomalies were observed on	0.82 % of the fish collected.
Index of Biotic Integrity (IBI) =	29 (Poor)
Modified Index of Well-Being (MIwb) =	8.8 (Good)
Shannon Diversity Index, no.	1.605
Shannon Diversity Index, wt.	1.635
N	1112
B	55.75

**Cuyahoga River Near Confluence with Lake Erie**

**July 18, 2014**

**River Mile: 0.20**

**Collection Method: Boat Electroshocking**

**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>DELT Anomalies #</b>	<b>Description</b>
43-001	<i>Cyprinus carpio</i> Common carp	10	17.681	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	61	0.06	--	0	---
47-004	<i>Ictalurus natalis</i> Yellow bullhead	3	0.8	Highly Tolerant	0	---
47-007	<i>Pylodictis olivaris</i> Flathead Catfish	1	1.3	--	0	---
74-001	<i>Morone chrysops</i> White bass	2	0.275	--	0	---
74-003	<i>Morone americana</i> White perch	10	0.5	--	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.7	--	0	---
77-009	<i>Lepomis macrochirus</i> Northern bluegill sunfish	1	0.09	Moderately Tolerant	0	---
85-001	<i>Aplodinotus grunniens</i> Freshwater drum	2	3.3	Moderately Tolerant	0	---
Totals		<u>91</u>	<u>24.706</u>		<u>0</u>	

\*DELT anomalies were observed on 0.00 % of the fish collected.  
 Index of Biotic Integrity (IBI) = 20 (Poor)  
 Modified Index of Well-Being (MIwb) = 5.9 (Poor)  
 Shannon Diversity Index, no. 1.182  
 Shannon Diversity Index, wt. 1.039  
 N 136  
 B 11.45

**Cuyahoga River Near Confluence with Lake Erie**

**October 10, 2014**

**River Mile: 0.20**

**Collection Method: Boat Electroshocking**

**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>DELT Anomalies #</b>	<b>Description</b>
20-003	<i>Dorosoma cepedianum</i> Eastern gizzard shad	14	0.177	--	0	---
43-001	<i>Cyprinus carpio</i> Common carp	2	6.35	Highly Tolerant	0	---
43-020	<i>Notropis atherinoides</i> Common Emerald shiner	213	0.288	--	0	---
70-001	<i>Labidesthes sicculus</i> Brook silverside	1	0.004	Moderately Intolerant	0	---
74-003	<i>Morone americana</i> White perch	1	0.005	--	0	---
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	1	0.5	Moderately Intolerant	0	---
77-006	<i>Micropterus salmoides</i> Largemouth bass	2	1.35	--	0	---
<b>Totals</b>		<u><u>234</u></u>	<u><u>8.674</u></u>		<u><u>0</u></u>	

\*DELT anomalies were observed on 0.00 % of the fish collected.

Index of Biotic Integrity (IBI) = 26 (Poor)

Modified Index of Well-Being (MIwb) = 5.1 (Poor)

Shannon Diversity Index, no. 0.405

Shannon Diversity Index, wt. 0.883

N 462

B 4.638