



Chagrin River Upstream of Miles Road
8/18/2022 10:40:00 AM
River Mile: 29.00
Collection Method: Longline Electrofishing
Drainage Area: 58 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	16	0.7640	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	8	0.3750	Tolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	207	1.71	Intolerant	0	--
43-007	<i>Hybopsis amblops</i> Bigeye chub	2	0.0120	Intolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.0060	Tolerant	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	59	0.1330	Intolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	151	0.46	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	16	0.0490	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	8	0.0220	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	16	0.0540	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	79	0.1730	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	39	0.2080	--	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	26	0.64	Intolerant	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	2	0.16	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	22	0.34	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.02	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	3	0.03	Moderately Tolerant	0	--



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77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.04	Moderately Tolerant	0	--
80-014	<i>Etheostoma nigrum</i> Johnny darter	1	0.0020	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	20	0.0580	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	18	0.0250	Moderately Intolerant	0	--
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	34	0.0370	--	0	--
Totals		731	5.3180		0	

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

Index of Biotic Integrity (IBI) = 52 (Exceptional)

Modified Index of Well-Being (MIwb) = 8.9 (Very Good)

Shannon Diversity Index, no. 2.29

Shannon Diversity Index, wt. 2.24

N = 961.50

B = 7.12



Chagrin River Upstream of Miles Road
10/5/2022 11:00:00 AM
River Mile: 29.00
Collection Method: Longline Electrofishing
Drainage Area: 58 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-010	<i>Moxostoma erythrurum</i> Golden redhorse	3	1.95	Moderately Intolerant	1	Deformities
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	21	1.3290	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	2	0.95	Tolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	52	1.1040	Intolerant	0	--
43-007	<i>Hybopsis amblops</i> Bigeye chub	2	0.01	Intolerant	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	6	0.0150	Intolerant	0	--
43-025	<i>Notropis chrysocephalus</i> Striped shiner	1	0.0260	--	0	--
43-026	<i>Notropis cornutus</i> Common shiner	23	0.0590	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	3	0.0080	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	12	0.0340	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	47	0.0730	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	16	0.1120	--	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	15	0.3850	Intolerant	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	4	0.40	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	19	1.37	Moderately Intolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.0090	--	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	5	0.04	Moderately Tolerant	0	--



Chagrin River Upstream of Miles Road
10/5/2022 11:00:00 AM
River Mile: 29.00
Collection Method: Longline Electrofishing
Drainage Area: 58 square miles
0.20 km
IBI Type: Wading

80-015	<i>Etheostoma blenniodes</i> Greenside darter	18	0.0720	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	6	0.0130	Moderately Intolerant	0	--
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	6	0.0120	--	0	--
Totals		262	7.9710		1	

*DELT anomalies were observed on = 0.3 % of the fish collected

Index of Biotic Integrity (IBI) = 44 (Good)

Modified Index of Well-Being (MIwb) = 8.6 (Good)

Shannon Diversity Index, no. 2.51

Shannon Diversity Index, wt. 2.07

N = 319.50

B = 10.42



Chagrin River Upstream of Willey Creek near Miles Road
8/18/2022 2:50:00 PM
River Mile: 26.70
Collection Method: Longline Electrofishing
Drainage Area: 119 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	4	0.66	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	2	0.0130	Tolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	72	1.28	Intolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	2	0.0050	Tolerant	0	--
43-020	<i>Notropis atherinoides</i> Common emerald shiner	1	0.0070	--	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	61	0.1020	Intolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	102	0.2280	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	70	0.2780	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	49	0.07	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	3	0.0080	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	32	0.04	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	53	0.1550	--	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	17	0.30	Intolerant	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.0580	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	53	1.0550	Moderately Intolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.0120	--	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	3	0.0740	Moderately Tolerant	0	--



Chagrin River Upstream of Willey Creek near Miles Road
8/18/2022 2:50:00 PM
River Mile: 26.70
Collection Method: Longline Electrofishing
Drainage Area: 119 square miles
0.20 km
IBI Type: Wading

80-014	<i>Etheostoma nigrum</i> Johnny darter	2	0.0040	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	26	0.1390	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	27	0.04	Moderately Intolerant	0	--
Totals		581	4.5280		0	

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

Index of Biotic Integrity (IBI) = 48 (Very Good)

Modified Index of Well-Being (MIwb) = 8.9 (Good)

Shannon Diversity Index, no. 2.43

Shannon Diversity Index, wt. 2.13

N = 817.50

B = 6.71



Chagrin River Upstream of Willey Creek near Miles Road
10/5/2022 8:35:00 AM
River Mile: 26.70
Collection Method: Longline Electrofishing
Drainage Area: 119 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	8	1.5250	Moderately Intolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	69	1.4280	Intolerant	0	--
43-007	<i>Hybopsis amblops</i> Bigeye chub	1	0.0030	Intolerant	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	40	0.0830	Intolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	77	0.2050	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	3	0.0190	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	37	0.0640	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	5	0.0120	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	10	0.0130	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	22	0.16	--	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	24	0.6650	Intolerant	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	1	0.0710	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	46	2.2980	Moderately Intolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	1	0.03	--	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.0220	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	0.0060	Moderately Tolerant	0	--
77-012	<i>Lepomis microlophus</i> Redear sunfish	2	0.0490	--	0	--



Chagrin River Upstream of Willey Creek near Miles Road
10/5/2022 8:35:00 AM
River Mile: 26.70
Collection Method: Longline Electrofishing
Drainage Area: 119 square miles
0.20 km
IBI Type: Wading

77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	0.0150	Moderately Tolerant	0	--
77-015	<i>HYBRID</i> Green sunfish X Bluegill sunfish	1	0.0220	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	22	0.1130	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	6	0.0110	Moderately Intolerant	0	--
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	1	0.0030	--	0	--
Totals		379	6.8170		0	

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

Index of Biotic Integrity (IBI) = 48 (Very Good)

Modified Index of Well-Being (MIwb) = 8.5 (Good)

Shannon Diversity Index, no. 2.35

Shannon Diversity Index, wt. 1.84

N = 547.50

B = 10.07



Chagrin River DS of Pepper-Luce Creek
8/19/2022 1:00:00 PM
River Mile: 22.60
Collection Method: Longline Electrofishing
Drainage Area: 153 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-009	<i>Moxostoma duquesnei</i> Black redbhorse	3	2.60	Intolerant	0	--
40-010	<i>Moxostoma erythrurum</i> Golden redbhorse	13	9.74	Moderately Intolerant	0	--
40-015	<i>Hypentelium nigricans</i> Northern hog sucker	8	3.0450	Moderately Intolerant	0	--
40-016	<i>Catostomus commersonii</i> Common white sucker	19	0.1050	Tolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	11	0.2180	Intolerant	0	--
43-007	<i>Hybopsis amblops</i> Bigeye chub	99	0.1330	Intolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	8	0.0250	Tolerant	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	75	0.1050	Intolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	2	0.0080	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	24	0.0970	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	122	0.1840	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	43	0.0750	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	74	0.0870	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	231	0.5840	--	0	--
47-004	<i>Ictalurus natalis</i> Yellow bullhead	8	0.21	Tolerant	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	18	0.4250	Intolerant	0	--
77-002	<i>Pomoxis nigromaculatus</i> Black crappie	1	0.02	--	0	--



Chagrin River DS of Pepper-Luce Creek
8/19/2022 1:00:00 PM
River Mile: 22.60
Collection Method: Longline Electrofishing
Drainage Area: 153 square miles
0.20 km
IBI Type: Wading

77-003	<i>Ambloplites rupestris</i> Northern rockbass	10	0.7440	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	59	2.7320	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.02	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	0.0150	Moderately Tolerant	0	--
80-011	<i>Percina caprodes</i> Northern logperch darter	4	0.0580	Moderately Intolerant	0	--
80-014	<i>Etheostoma nigrum</i> Johnny darter	6	0.0110	--	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	44	0.1070	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	178	0.2220	Moderately Intolerant	0	--
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	15	0.0150	--	0	--
Totals		1077	21.5850		0	

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

Index of Biotic Integrity (IBI) = 54 (Exceptional)

Modified Index of Well-Being (MIwb) = 9.7 (Exceptional)

Shannon Diversity Index, no. 2.52

Shannon Diversity Index, wt. 1.85

N = 1450.50

B = 31.71



Chagrin River DS of Pepper-Luce Creek
9/16/2022 10:40:00 AM
River Mile: 22.60
Collection Method: Longline Electrofishing
Drainage Area: 153 square miles
0.20 km
IBI Type: Wading

Code	Species	No.	Weight (kg)	Pollution Tolerance	DELT Anomalies	
					#	Description
40-016	<i>Catostomus commersonii</i> Common white sucker	6	0.0980	Tolerant	0	--
43-005	<i>Nocomis micropogon</i> River chub	4	0.0240	Intolerant	0	--
43-007	<i>Hybopsis amblops</i> Bigeye chub	137	0.3330	Intolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	4	0.0150	Tolerant	0	--
43-022	<i>Notropis rubellus</i> Rosyface shiner	120	0.1820	Intolerant	0	--
43-026	<i>Notropis cornutus</i> Common shiner	11	0.0310	--	0	--
43-032	<i>Cyprinella spiloptera</i> Spotfin shiner	27	0.0650	--	0	--
43-034	<i>Notropis stramineus</i> Sand shiner	247	0.3580	Moderately Intolerant	0	--
43-039	<i>Ericymba buccata</i> Silverjaw minnow	7	0.0080	--	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	319	0.4560	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	52	0.2120	--	0	--
47-004	<i>Ictalurus natalis</i> Yellow bullhead	1	0.0080	Tolerant	0	--
47-008	<i>Noturus flavus</i> Stonecat madtom	8	0.07	Intolerant	0	--
77-003	<i>Ambloplites rupestris</i> Northern rockbass	3	0.1350	--	0	--
77-004	<i>Micropterus dolomieu</i> Smallmouth bass	21	0.2960	Moderately Intolerant	0	--
77-008	<i>Lepomis cyanellus</i> Green sunfish	1	0.0320	Tolerant	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	5	0.0530	Moderately Tolerant	0	--



Chagrin River DS of Pepper-Luce Creek
9/16/2022 10:40:00 AM
River Mile: 22.60
Collection Method: Longline Electrofishing
Drainage Area: 153 square miles
0.20 km
IBI Type: Wading

80-011	<i>Percina caprodes</i> Northern logperch darter	1	0.02	Moderately Intolerant	0	--
80-015	<i>Etheostoma blenniodes</i> Greenside darter	24	0.1020	Moderately Intolerant	0	--
80-022	<i>Etheostoma caeruleum</i> Rainbow darter	83	0.1050	Moderately Intolerant	0	--
80-024	<i>Etheostoma flabellare</i> Barred Fantail darter	9	0.0150	--	0	--
Totals		1090	2.6180		0	

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

Index of Biotic Integrity (IBI) = 40 (Good)

Modified Index of Well-Being (MIwb) = 8.7 (Good)

Shannon Diversity Index, no. 2.08

Shannon Diversity Index, wt. 2.55

N = 1138.50

B = 3.01



Willey Creek DS of Former Jackson Valley WWTP
7/7/2022 1:01:00 PM
River Mile: 1.00
Collection Method: Longline Electrofishing
Drainage Area: 4.0 square miles
0.15 km
IBI Type: Headwaters

Code	Species	No.	Pollution Tolerance	DELT Anomalies #	Description
40-016	<i>Catostomus commersonii</i> Common white sucker	14	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	284	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	138	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	196	--	0	--
Totals		632		0	

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

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



Willey Creek DS of Former Jackson Valley WWTP
10/7/2022 2:00:00 PM
River Mile: 1.00
Collection Method: Longline Electrofishing
Drainage Area: 4.0 square miles
0.15 km
IBI Type: Headwaters

Code	Species	No.	Pollution Tolerance	DELT Anomalies #	Description
40-016	<i>Catostomus commersonii</i> Common white sucker	5	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	263	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	169	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	250	--	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	Moderately Tolerant	0	--
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	1	Moderately Tolerant	0	--
Totals		689		0	

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

Index of Biotic Integrity (IBI) = 32 (Fair)



**Pepper-Luce Creek RM 3.20 Downstream of Creekside
 WWTP**
6/30/2022 2:00:00 PM
River Mile: 3.20
Collection Method: Longline Electrofishing
Drainage Area: 7.5 square miles
0.15 km
IBI Type: Headwaters

Code	Species	No.	Pollution Tolerance	DELT Anomalies	
				#	Description
40-016	<i>Catostomus commersonii</i> Common white sucker	236	Tolerant	0	--
43-001	<i>Cyprinus carpio</i> Common carp	5	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	297	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	84	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	78	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	750	--	0	--
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	Tolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	7	--	0	--
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	2	Moderately Tolerant	0	--
Totals		1461		0	

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

Index of Biotic Integrity (IBI) = 32 (Fair)



Pepper-Luce Creek RM 3.20 Downstream of Creekside
 WWTP
 10/7/2022 12:00:00 PM
 River Mile: 3.20
 Collection Method: Longline Electrofishing
 Drainage Area: 7.5 square miles
 0.15 km
 IBI Type: Headwaters

Code	Species	No.	Pollution Tolerance	DELT Anomalies #	Description
40-016	<i>Catostomus commersonii</i> Common white sucker	88	Tolerant	0	--
43-011	<i>Rhinichthys atratulus</i> Blacknose dace	137	Tolerant	0	--
43-013	<i>Semotilus atromaculatus</i> Creek chub	57	Tolerant	0	--
43-043	<i>Pimephales notatus</i> Bluntnose minnow	242	Tolerant	0	--
43-044	<i>Campostoma anomalum</i> Central stoneroller minnow	323	--	0	--
47-004	<i>Ictalurus natalis</i> Yellow bullhead	2	Tolerant	0	--
77-006	<i>Micropterus salmoides</i> Largemouth bass	3	--	0	--
77-009	<i>Lepomis macrochirus</i> Bluegill sunfish	1	Moderately Tolerant	0	--
77-013	<i>Lepomis gibbosus</i> Pumpkinseed sunfish	4	Moderately Tolerant	0	--
Totals		857		0	

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

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