

APPENDIX A: 2020 Site Characteristics and Location Data

Appendix Table A-1. Legend.

Indicator Groups & Parameters											
Fish	Macroinvertebrates		Habitat		Field	Demand	Nutrients	Metals	Bacteria	Sed. Metals	
P - Raft		HD - Artificial substrates		QHEI ¹	Temp.	BOD5	NH3-N	Cd	<i>E. coli</i>		Cd
D - Roller Barge		QL - Qualitative sample			Conductivity	Chloride	NO3-N	Cu			Cu
E - Longline					D.O.	Sulfate	NO2-N	Pb			Pb
F - Backpack					pH	TDS	TKN	Ni			Zn
						TSS	Total P	Zn			Ni
						Cond.	Ortho P	Fe			Fe
						pH	Seston. Chla	Ca			As
							Benth. Chla	Mg			Sed. Organics
								As			BNAs
											VOCs
											PAHs
											Pesticides
											PCBs

¹ QHEI - Qual. Habitat Eval. Index

APPENDIX B: Scioto River Mainstem Fish Assemblage Data

B-1: Scioto River IBI Metrics, IBI Scores, and MIwb Scores

B-2: Scioto River Fish Species Grand Ust. Greenlawn Dam 1979-2020

B-3: Scioto River Fish Species Grand Dst. Greenlawn Dam 1979-2020

B-4: Fish Species Abundance Ust. Greenlawn Dam by Year Interval 1979-2020

B-5: Fish Species Abundance Dst. Greenlawn Dam by Year Interval 1979-2020

B-6: Scioto River Fish Species by Site and Sample 2020

Appendix Table B-1. Boatable IBI scores and metrics for the Scioto River mainstem sampled in 2020 by MBI.

Site ID	River Mile	Type	Drainage Date	Drainage area (sq mi)	Number of				Percent of Individuals						Rel.No. minus tolerants /(1.0 km)	Modified			
					Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insectivores		DELTA anomalies	IBI	lwb	Source
Scioto River - (02001)																			
Year: 2020																			
SR01	136.00	P	08/28/2020	1050	27(5)	5(5)	6(5)	6(5)	17(1)	23(3)	20(3)	2(5)	10(5)	84(5)	0.0(5)	436(5)	52	9.4	MBI
SR01	136.00	P	10/08/2020	1050	25(5)	5(5)	4(3)	6(5)	7(1)	20(1)	13(5)	6(5)	19(5)	63(5)	0.0(5)	422(5)	50	9.3	MBI
SR02	133.25	P	08/04/2020	1067	22(5)	3(3)	8(5)	3(3)	13(1)	15(1)	14(5)	9(5)	23(5)	65(5)	0.0(5)	272(3)	46	9.3	MBI
SR03	132.80	P	08/04/2020	1068	27(5)	4(5)	7(5)	4(5)	23(3)	31(3)	4(5)	2(5)	38(5)	56(5)	0.0(5)	426(5)	56	9.8	MBI
SR04	131.95	P	07/30/2020	1614	18(3)	5(5)	4(3)	0(1)	16(1)	19(1)	28(1)	12(5)	10(3)	75(5)	0.5(5)	304(3)	36	8.8	MBI
SR04	131.95	P	10/05/2020	1614	23(5)	6(5)	4(3)	2(3)	6(1)	9(1)	23(3)	14(5)	9(3)	74(5)	0.0(5)	516(5)	44	8.5	MBI
SR05	130.45	P	07/30/2020	1615	19(3)	5(5)	5(3)	0(1)	10(1)	11(1)	16(3)	12(5)	8(3)	79(5)	0.0(5)	364(3)	38	9.2	MBI
SR05	130.45	P	10/05/2020	1615	15(3)	5(5)	2(1)	1(1)	3(1)	5(1)	26(3)	31(1)	6(3)	63(5)	0.0(5)	492(5)	34	7.1	MBI
SR06	129.23	P	07/31/2020	1620	39(5)	5(5)	8(5)	7(5)	5(1)	28(3)	5(5)	11(5)	8(3)	76(5)	0.0(5)	660(5)	52	10.9	MBI
SR06	129.23	P	10/14/2020	1620	38(5)	5(5)	6(5)	8(5)	5(1)	33(3)	4(5)	5(5)	16(5)	72(5)	0.0(5)	480(5)	54	10.3	MBI
SR07	127.60	A	08/25/2020	1628	40(5)	4(5)	7(5)	9(5)	5(1)	26(3)	4(5)	13(5)	3(1)	79(5)	0.2(5)	956(5)	50	11.0	MBI
SR07	127.60	A	10/14/2020	1628	41(5)	3(3)	8(5)	10(5)	7(1)	41(5)	8(5)	14(5)	8(3)	63(5)	0.0(5)	766(5)	52	11.2	MBI
SR08.2	127.25	A	08/25/2020	1620	22(5)	4(5)	3(3)	3(3)	2(1)	12(1)	16(3)	31(1)	9(3)	55(5)	0.0(5)	284(3)	38	9.5	MBI
SR08.2	127.25	A	10/14/2020	1620	24(5)	5(5)	6(5)	3(3)	3(1)	12(1)	10(5)	13(5)	16(5)	67(5)	0.0(5)	322(3)	48	9.4	MBI
SRJPMZ	127.00	A	08/25/2020	1628	10(3)	2(3)	2(1)	1(1)	0(1)	6(1)	6(5)	25(3)	13(5)	63(5)	0.0(5)	150(1) *	34	7.4	MBI
SRJPMZ	127.00	A	10/13/2020	1628	8(1)	0(1)	4(3)	1(1)	0(1)	7(1)	3(5)	57(1)	10(3)	30(3)	0.0(5)	290(3)	28	9.0	MBI
SR08	126.40	P	08/26/2020	1630	37(5)	4(5)	8(5)	8(5)	6(1)	25(3)	9(5)	10(5)	11(5)	75(5)	0.0(5)	450(5)	54	10.6	MBI
SR08	126.40	A	10/13/2020	1630	31(5)	4(5)	7(5)	3(3)	5(1)	15(1)	14(5)	17(3)	10(5)	67(5)	0.0(5)	372(3)	46	10.1	MBI
SR09	125.05	P	08/26/2020	1640	19(3)	6(5)	4(3)	0(1)	3(1)	3(1)	13(5)	14(5)	7(3)	75(5)	0.6(3)	316(3)	38	9.4	MBI
SR09	125.05	A	10/13/2020	1640	22(5)	4(5)	5(3)	0(1)	3(1)	4(1)	8(5)	10(5)	11(5)	76(5)	0.6(3)	298(3)	42	9.8	MBI
SR10	124.20	P	08/26/2020	1667	34(5)	4(5)	6(5)	5(5)	17(1)	25(3)	7(5)	5(5)	7(3)	83(5)	0.9(3)	414(3)	48	10.4	MBI
SR10	124.20	A	10/13/2020	1667	36(5)	3(3)	8(5)	7(5)	27(3)	52(5)	2(5)	9(5)	6(3)	80(5)	0.0(5)	492(5)	54	10.7	MBI
SR11	119.90	A	09/01/2020	1700	27(5)	3(3)	8(5)	4(5)	20(3)	23(3)	4(5)	3(5)	8(3)	82(5)	0.0(5)	428(5)	52	10.2	MBI
SR11	119.90	A	10/09/2020	1700	38(5)	4(5)	8(5)	5(5)	10(1)	23(3)	4(5)	4(5)	8(3)	76(5)	0.0(5)	632(5)	52	10.8	MBI

♦ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix Table A-1. Boatable IBI scores and metrics for the Scioto River mainstem sampled for the City of Columbus Project in 2020 by MBI.

Site ID	River Mile	Type	Drainage Date	Drainage area (sq mi)	Number of				Percent of Individuals							Rel.No. minus tolerants /(1.0 km)	Modified IBI	lwb	Source
					Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insectivores	DELTA anomalies				
SRCSMZ	118.20	A	09/01/2020	1708	20(3)	3(3)	5(3)	2(3)	8(1)	17(1)	23(3)	21(3)	6(3)	69(5)	0.0(5)	370(3)	36	9.6	MBI
SRCSMZ	118.20	A	10/09/2020	1708	15(3)	2(3)	4(3)	2(3)	6(1)	21(3)	9(5)	11(5)	6(3)	82(5)	0.0(5)	1100(5)	44	9.5	MBI
SR12	117.80	A	09/01/2020	1708	27(5)	3(3)	8(5)	5(5)	23(3)	32(3)	4(5)	14(5)	9(3)	67(5)	0.0(5)	378(3)	50	10.8	MBI
SR12	117.80	A	10/09/2020	1708	31(5)	1(1)	9(5)	6(5)	28(3)	37(3)	4(5)	19(3)	8(3)	67(5)	0.3(5)	598(5)	48	11.1	MBI
SR13	117.00	A	09/01/2020	2260	23(5)	4(5)	5(3)	2(3)	22(3)	26(3)	7(5)	9(5)	14(5)	71(5)	0.0(5)	258(3)	50	9.7	MBI
SR13	117.00	A	10/09/2020	2260	27(5)	3(3)	6(5)	2(3)	38(3)	43(5)	4(5)	9(5)	21(5)	62(5)	0.0(5)	328(3)	52	10.2	MBI
SR14	115.75	A	09/01/2020	2260	36(5)	2(3)	9(5)	7(5)	24(3)	40(5)	1(5)	5(5)	7(3)	76(5)	0.0(5)	542(5)	54	11.1	MBI
SR14	115.75	A	10/09/2020	2260	35(5)	3(3)	8(5)	6(5)	24(3)	40(5)	0(5)	5(5)	8(3)	76(5)	0.0(5)	774(5)	54	11.1	MBI
SR15	113.85	A	09/16/2020	2275	35(5)	3(3)	8(5)	6(5)	18(1)	40(5)	2(5)	5(5)	6(3)	83(5)	1.2(3)	480(5)	50	10.9	MBI
SR15	113.85	A	10/06/2020	2275	33(5)	2(3)	7(5)	9(5)	21(3)	53(5)	3(5)	6(5)	2(1)	88(5)	0.0(5)	530(5)	52	10.5	MBI
SR16	109.23	A	09/16/2020	2310	31(5)	1(1)	7(5)	6(5)	10(1)	33(3)	1(5)	1(5)	3(1)	84(5)	0.7(3)	832(5)	44	10.5	MBI
SR16	109.23	A	10/07/2020	2310	32(5)	0(1)	8(5)	4(5)	9(1)	28(3)	0(5)	3(5)	3(1)	87(5)	0.0(5)	882(5)	46	10.6	MBI
SR17	107.35	A	09/16/2020	2320	27(5)	3(3)	9(5)	4(5)	20(3)	34(3)	3(5)	7(5)	7(3)	84(5)	0.6(3)	342(3)	48	10.2	MBI
SR17	107.35	A	10/07/2020	2320	30(5)	0(1)	7(5)	7(5)	18(1)	36(5)	1(5)	5(5)	11(5)	77(5)	0.0(5)	440(5)	52	10.3	MBI
SR18	105.10	A	09/16/2020	2610	28(5)	3(3)	7(5)	3(3)	16(1)	23(3)	4(5)	5(5)	6(3)	82(5)	0.0(5)	316(3)	46	10.3	MBI
SR18	105.10	A	10/07/2020	2610	31(5)	2(3)	7(5)	3(3)	14(1)	29(3)	0(5)	3(5)	6(3)	82(5)	0.3(5)	690(5)	48	10.9	MBI
SR19	101.83	A	09/16/2020	2638	42(5)	4(5)	8(5)	12(5)	16(1)	49(5)	3(5)	4(5)	6(3)	84(5)	0.4(5)	524(5)	54	10.8	MBI
SR19	101.83	A	10/07/2020	2638	28(5)	1(1)	5(3)	7(5)	16(1)	44(5)	0(5)	1(5)	9(3)	82(5)	0.0(5)	500(5)	48	10.4	MBI
SR20	100.05	A	08/31/2020	3200	37(5)	4(5)	7(5)	6(5)	11(1)	31(3)	1(5)	4(5)	8(3)	82(5)	0.0(5)	758(5)	52	10.7	MBI
SR20	100.05	A	10/06/2020	3200	39(5)	5(5)	6(5)	7(5)	2(1)	17(3)	4(5)	12(5)	7(3)	80(5)	0.0(5)	918(5)	52	10.4	MBI
SR21	99.35	A	08/31/2020	3220	38(5)	2(3)	8(5)	8(5)	9(1)	48(5)	5(5)	7(5)	6(3)	76(5)	0.0(5)	544(5)	52	10.8	MBI
SR21	99.35	A	10/06/2020	3220	33(5)	2(3)	7(5)	9(5)	8(1)	29(3)	2(5)	2(5)	11(5)	83(5)	0.0(5)	576(5)	52	9.6	MBI
SR22	98.50	A	08/31/2020	3220	25(5)	3(3)	6(5)	2(3)	10(1)	16(1)	9(5)	10(5)	9(3)	70(5)	0.0(5)	246(3)	44	9.6	MBI
SR22	98.50	A	10/06/2020	3220	29(5)	4(5)	5(3)	6(5)	5(1)	14(1)	3(5)	8(5)	14(5)	76(5)	0.0(5)	386(3)	48	9.5	MBI
SR23	97.90	A	10/15/2020	3220	40(5)	3(3)	5(3)	11(5)	8(1)	46(5)	3(5)	7(5)	9(3)	79(5)	0.1(5)	1416(5)	50	10.9	MBI

♦ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix B-2: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Scioto River Upstream Greenlawn Dam*

Years: 1979; 1980; 1981; 1986; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999; 2000; 2002; 2003; 2004;

Number of Samples: 174 Data Sources: 01; 30; 99 Data Types: A; D; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		2	0.0	0.00	0	0.00	25.0
20-003	GIZZARD SHAD	O		M		11415	125.6	18.88	2317	8.30	18.4
37-001	REDFIN PICKEREL	P	P	M		1	0.0	0.00	1	0.00	120.0
40-002	BIGMOUTH BUFFALO	I		M	C	8	0.1	0.01	263	0.94	2990.5
40-004	SMALLMOUTH BUFFALO	I		M	C	87	1.0	0.14	728	2.61	761.2
40-005	QUILLBACK CARPSUCKER	O		M	C	260	2.9	0.43	846	3.03	295.8
40-006	RIVER CARPSUCKER	O		M	C	144	1.6	0.24	503	1.80	317.7
40-007	HIGHFIN CARPSUCKER	O		M	C	2	0.0	0.00	8	0.03	392.0
40-008	SILVER REDHORSE	I	M	S	R	95	1.1	0.16	739	2.65	707.2
40-009	BLACK REDHORSE	I	I	S	R	1174	12.9	1.94	1265	4.53	97.9
40-010	GOLDEN REDHORSE	I	M	S	R	3066	33.7	5.07	2743	9.83	81.3
40-013	RIVER REDHORSE	I	I	S	R	352	3.9	0.58	1961	7.03	506.5
40-015	NORTHERN HOG SUCKER	I	M	S	R	470	5.2	0.78	422	1.51	81.6
40-016	WHITE SUCKER	O	T	S	W	24	0.3	0.04	62	0.22	236.3
40-018	SPOTTED SUCKER	I		S	R	259	2.9	0.43	314	1.13	110.2
40-023	SMALLMOUTH REDHORSE	I	M	S	R	75	0.8	0.12	167	0.60	203.2
43-001	COMMON CARP	O	T	M	G	1173	12.9	1.94	6383	22.87	494.7
43-002	GOLDFISH	O	T	M	G	139	1.5	0.23	100	0.36	65.4
43-003	GOLDEN SHINER	I	T	M	N	707	7.8	1.17	65	0.23	8.3
43-005	RIVER CHUB	I	I	N	N	922	10.1	1.53	88	0.32	8.7
43-013	CREEK CHUB	G	T	N	N	7	0.1	0.01	1	0.01	18.5
43-015	SUCKERMOUTH MINNOW	I		S	N	6	0.1	0.01	0	0.00	7.1
43-020	EMERALD SHINER	I		M	N	18	0.2	0.03	1	0.00	5.7
43-021	SILVER SHINER	I	I	S	N	45	0.5	0.07	2	0.01	5.4
43-022	ROSYFACE SHINER	I	I	S	N	82	0.9	0.14	2	0.01	2.2
43-025	STRIPED SHINER	I		S	N	455	5.0	0.75	44	0.16	8.8
43-031	STEELCOLOR SHINER	I	P	M	N	5	0.1	0.01	0	0.00	5.0
43-032	SPOTFIN SHINER	I		M	N	476	5.2	0.79	24	0.09	4.6
43-034	SAND SHINER	I	M	M	N	77	0.9	0.13	1	0.00	1.4
43-041	BULLHEAD MINNOW	O		C	N	102	1.1	0.17	1	0.01	1.3
43-042	FATHEAD MINNOW	O	T	C	N	2	0.0	0.00	0	0.00	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	3506	38.6	5.80	85	0.31	2.2
43-044	CENTRAL STONEROLLER	H		N	N	1368	15.1	2.26	105	0.38	6.9
43-045	COMMON CARP X GOLDFISH	O	T		G	6	0.1	0.01	66	0.24	1007.0
43-047	GRASS CARP			M	E	1	0.0	0.00	154	0.55	14000.0
47-002	CHANNEL CATFISH			C	F	66	0.7	0.11	421	1.51	580.1
47-004	YELLOW BULLHEAD	I	T	C		69	0.8	0.11	58	0.21	76.7
47-005	BROWN BULLHEAD	I	T	C		10	0.1	0.02	9	0.03	88.0
47-006	BLACK BULLHEAD	I	P	C		2	0.0	0.00	2	0.01	106.0
47-007	FLATHEAD CATFISH	P		C	F	64	0.7	0.11	851	3.05	1209.4

Appendix B-2: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Scioto River*

Years: 1979; 1980; 1981; 1986; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999; 2000; 2002; 2003; 2004;

Number of Samples: 174 Data Sources: 01; 30; 99 Data Types: A; D; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
47-008	STONECAT MADTOM	I	I	C		29	0.3	0.05	3	0.01	11.1
47-010	NORTHERN MADTOM	I	R	C		1	0.0	0.00	0	0.00	4.0
47-012	BRINDLED MADTOM	I	I	C		18	0.2	0.03	1	0.00	5.1
70-001	BROOK SILVERSIDE	I	M	M		686	7.6	1.13	14	0.05	1.9
74-001	WHITE BASS	P		M	F	31	0.3	0.05	23	0.08	68.4
77-001	WHITE CRAPPIE	I		C	S	316	3.5	0.52	78	0.28	22.6
77-002	BLACK CRAPPIE	I		C	S	226	2.5	0.37	134	0.48	54.2
77-003	ROCK BASS	C		C	S	2211	24.3	3.66	575	2.06	23.6
77-004	SMALLMOUTH BASS	C	M	C	F	5266	57.9	8.71	1105	3.96	19.0
77-005	SPOTTED BASS	C		C	F	124	1.4	0.21	20	0.07	14.9
77-006	LARGEMOUTH BASS	C		C	F	3128	34.4	5.17	1253	4.49	36.4
77-007	WARMOUTH SUNFISH	C		C	S	2	0.0	0.00	0	0.00	27.0
77-008	GREEN SUNFISH	I	T	C	S	3801	41.8	6.29	531	1.90	12.7
77-009	BLUEGILL SUNFISH	I	P	C	S	8723	96.0	14.43	1115	4.00	11.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	852	9.4	1.41	62	0.22	6.6
77-011	LONGEAR SUNFISH	I	M	C	S	3739	41.1	6.19	418	1.50	10.1
77-012	REDEAR SUNFISH	I		C	E	65	0.7	0.11	20	0.07	28.2
77-013	PUMPKINSEED SUNFISH	I	P	C	S	707	7.8	1.17	137	0.49	17.6
77-014	BLUEGILL X PUMPKINSEED					1	0.0	0.00	1	0.00	96.0
77-015	GREEN SF X BLUEGILL SF					253	2.8	0.42	45	0.16	16.2
77-016	GREEN SF X PUMPKINSEED					11	0.1	0.02	5	0.02	46.3
77-017	LONGEAR SF X BLUEGILL SF					25	0.3	0.04	15	0.06	56.1
77-018	BLUEGILL X ORANGESPOT					11	0.1	0.02	0	0.00	0.5
77-019	GREEN SF X ORANGESPOT SF					5	0.1	0.01	1	0.00	18.4
77-020	PUMPKINSEED X LONGEAR SF					4	0.0	0.01	0	0.00	17.7
77-021	GREEN SF X LONGEAR SF					38	0.4	0.06	7	0.03	18.9
77-022	ORANGESPOT SF X PUMPKSEED					3	0.0	0.00	0	0.00	14.0
77-023	LONGEAR X ORANGESPOT					2	0.0	0.00	0	0.00	19.5
77-028	BLUEGILL SF X REDEAR SF	I		C		128	1.4	0.21	16	0.06	11.6
77-998	GREEN SF X HYBRID					302	3.3	0.50	121	0.43	36.4
77-999	HYBRID X SUNFISH					1006	11.1	1.66	181	0.65	16.4
80-001	SAUGER	P		S	F	1	0.0	0.00	2	0.01	260.0
80-002	WALLEYE	P		S	F	25	0.3	0.04	139	0.50	505.6
80-003	YELLOW PERCH			M		1	0.0	0.00	0	0.00	2.0
80-005	BLACKSIDE DARTER	I		S	D	1	0.0	0.00	0	0.00	2.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	0.0	0.00	0	0.00	4.0
80-011	LOGPERCH	I	M	S	D	1028	11.3	1.70	67	0.24	5.9
80-014	JOHNNY DARTER	I		C	D	28	0.1	0.05	0	0.00	1.5
80-015	GREENSIDE DARTER	I	M	S	D	263	2.9	0.44	12	0.04	4.2
80-016	BANDED DARTER	I	I	S	D	68	0.8	0.11	1	0.00	1.3

Appendix B-2: Midwest Biodiversity Institute Fish Species List - Grand Totals

Rivers: *Scioto River*

Years: 1979; 1980; 1981; 1986; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999; 2000; 2002; 2003; 2004;

Number of Samples: 174 Data Sources: 01; 30; 99 Data Types: A; D; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-019	BLUEBREAST DARTER	I	R	S	D	8	0.1	0.01	0	0.00	3.1
80-022	RAINBOW DARTER	I	M	S	D	40	0.4	0.07	0	0.00	1.9
80-024	FANTAIL DARTER	I		C	D	136	1.5	0.22	2	0.01	1.6
80-026	SAUGER X WALLEYE	P			E	383	4.2	0.63	799	2.86	189.7
85-001	FRESHWATER DRUM		P	M		12	0.1	0.02	174	0.63	1325.1

No Species: 85 **Nat. Species:** 66 **Hybrids:** 15 **Total Counted:** 60451 **Total Rel. Wt. :** 27909

Appendix B-3: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Scioto River Downstream Greenlawn Dam*

Years: 1979; 1980; 1981; 1982; 1984; 1985; 1986; 1987; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999;

Number of Samples: 1069 Data Sources: 01; 20; 30; 31; 99; Data Types: A; B; C; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
01-001	Silver Lamprey	P		N		36	0.1	0.01	1	0.00	22.5
01-006	Least Brook Lamprey	F		N		12	0.0	0.00	0	0.00	1.9
04-001	PADDLEFISH	F	S	S		7	0.0	0.00	150	0.32	10742.8
10-002	SHORTNOSE GAR	P		M		2	0.0	0.00	3	0.01	925.0
10-004	LONGNOSE GAR	P		M		581	0.6	0.21	192	0.81	330.7
18-001	GOLDEYE	I	R	M		4	0.0	0.00	3	0.01	385.0
18-002	MOONEYE	I	R	M		56	0.1	0.02	20	0.04	185.0
20-001	SKIPJACK HERRING	P		M		179	0.4	0.07	13	0.03	37.9
20-003	GIZZARD SHAD	O		M		21719	43.4	8.03	2063	4.34	47.4
37-001	REDFIN PICKEREL	P	P	M		44	0.1	0.02	2	0.01	27.0
37-003	NORTHERN PIKE	P		M	F	2	0.0	0.00	0	0.00	220.0
37-004	MUSKELLUNGE	P		M	F	26	0.1	0.01	250	0.53	4820.2
40-002	BIGMOUTH BUFFALO	I		M	C	284	0.6	0.11	918	1.93	1616.7
40-003	BLACK BUFFALO	I		M	C	1018	2.0	0.38	2180	4.58	1070.8
40-004	SMALLMOUTH BUFFALO	I		M	C	4902	9.8	1.81	5298	11.14	540.4
40-005	QUILLBACK CARPSUCKER	O		M	C	1039	2.1	0.38	818	1.72	393.8
40-006	RIVER CARPSUCKER	O		M	C	12224	24.5	4.52	5075	10.67	207.6
40-007	HIGHFIN CARPSUCKER	O		M	C	75	0.2	0.03	58	0.12	391.3
40-008	SILVER REDHORSE	I	M	S	R	1720	3.4	0.64	1964	4.13	570.9
40-009	BLACK REDHORSE	I	I	S	R	547	1.1	0.20	295	0.62	270.2
40-010	GOLDEN REDHORSE	I	M	S	R	10667	21.3	3.94	2293	4.82	107.5
40-013	RIVER REDHORSE	I	I	S	R	201	0.4	0.07	565	1.19	1406.7
40-015	NORTHERN HOG SUCKER	I	M	S	R	8200	16.4	3.03	1066	2.24	65.0
40-016	WHITE SUCKER	O	T	S	W	178	0.4	0.07	63	0.13	179.5
40-018	SPOTTED SUCKER	I		S	R	1315	2.6	0.49	274	0.58	104.3
40-022	BM BUFFALO X SM BUFFALO	I		M	C	9	0.0	0.00	42	0.09	2377.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	9736	19.5	3.60	3569	7.50	183.3
43-001	COMMON CARP	O	T	M	G	7095	14.2	2.62	6846	14.39	482.5
43-002	GOLDFISH	O	T	M	G	234	0.5	0.09	48	0.10	103.0
43-003	GOLDEN SHINER	I	T	M	N	237	0.5	0.09	6	0.01	13.3
43-004	HORNHEAD CHUB	I	I	N	N	1	0.0	0.00	0	0.00	2.0
43-005	RIVER CHUB	I	I	N	N	285	0.6	0.11	5	0.01	8.9
43-006	SILVER CHUB	I		M	N	3	0.0	0.00	0	0.00	20.3
43-007	BIGEYE CHUB	I	I	S	N	105	0.2	0.04	0	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	663	0.7	0.25	3	0.02	5.6
43-009	GRAVEL CHUB	I	M	S	N	7230	7.2	2.67	27	0.11	3.7
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	44	0.0	0.02	0	0.00	1.0
43-013	CREEK CHUB	G	T	N	N	310	0.3	0.11	0	0.00	1.2
43-015	SUCKERMOUTH MINNOW	I		S	N	11284	22.6	4.17	79	0.17	3.5
43-020	EMERALD SHINER	I		M	N	27418	54.8	10.14	77	0.16	1.4

Appendix B-2: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Scioto River*

Years: 1979; 1980; 1981; 1982; 1984; 1985; 1986; 1987; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999;

Number of Samples: 1069 Data Sources: 01; 20; 30; 31; 99; Data Types: A; B; C; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-021	SILVER SHINER	I	I	S	N	951	1.9	0.35	9	0.02	4.8
43-022	ROSYFACE SHINER	I	I	S	N	285	0.3	0.11	0	0.00	1.5
43-024	SCARLET SHINER	I	M	S	N	6	0.0	0.00	0	0.00	1.8
43-025	STRIPED SHINER	I		S	N	838	0.8	0.31	2	0.01	3.2
43-027	RIVER SHINER	I		S	N	51	0.1	0.02	0	0.00	3.5
43-031	STEELCOLOR SHINER	I	P	M	N	6125	12.3	2.26	45	0.10	3.7
43-032	SPOTFIN SHINER	I		M	N	19636	39.3	7.26	92	0.19	2.3
43-034	SAND SHINER	I	M	M	N	5966	11.9	2.21	14	0.03	1.1
43-035	MIMIC SHINER	I	I	M	N	754	0.8	0.28	0	0.00	1.0
43-039	SILVERJAW MINNOW	I		M	N	67	0.1	0.02	0	0.00	0.9
43-041	BULLHEAD MINNOW	O		C	N	4568	9.1	1.69	16	0.03	1.8
43-042	FATHEAD MINNOW	O	T	C	N	17	0.0	0.01	0	0.00	2.4
43-043	BLUNTNOSE MINNOW	O	T	C	N	6888	13.8	2.55	28	0.06	2.0
43-044	CENTRAL STONEROLLER	H		N	N	6992	14.0	2.59	65	0.14	4.6
43-045	COMMON CARP X GOLDFISH	O	T		G	69	0.1	0.03	97	0.21	708.0
43-047	GRASS CARP			M	E	20	0.0	0.01	276	0.58	6909.5
43-063	CHANNEL SHINER	I	I	M	N	672	1.3	0.25	1	0.00	1.3
43-999	HYBRID X MINNOW					62	0.1	0.02	0	0.00	1.3
47-002	CHANNEL CATFISH			C	F	7500	15.0	2.77	3693	7.77	246.2
47-004	YELLOW BULLHEAD	I	T	C		125	0.3	0.05	14	0.03	58.4
47-005	BROWN BULLHEAD	I	T	C		6	0.0	0.00	2	0.00	180.3
47-006	BLACK BULLHEAD	I	P	C		7	0.0	0.00	1	0.00	92.4
47-007	FLATHEAD CATFISH	P		C	F	679	1.4	0.25	1712	3.60	1260.8
47-008	STONECAT MADTOM	I	I	C		158	0.2	0.06	1	0.01	9.5
47-010	NORTHERN MADTOM	I	R	C		1	0.0	0.00	0	0.00	2.0
47-012	BRINDLED MADTOM	I	I	C		1	0.0	0.00	0	0.00	4.0
54-002	BLACKSTRIPE TOPMINNOW	I		M		42	0.1	0.02	0	0.00	1.1
63-001	TROUT-PERCH	I		M		1	0.0	0.00	0	0.00	4.0
70-001	BROOK SILVERSIDE	I	M	M		593	1.2	0.22	1	0.00	1.5
74-001	WHITE BASS	P		M	F	848	1.7	0.31	115	0.24	68.1
74-002	STRIPED BASS	P		M	E	3	0.0	0.00	0	0.00	12.6
74-005	Striped X White Bass				E	18	0.0	0.01	15	0.03	427.7
77-001	WHITE CRAPPIE	I		C	S	409	0.8	0.15	56	0.12	69.5
77-002	BLACK CRAPPIE	I		C	S	1012	2.0	0.37	113	0.24	55.8
77-003	ROCK BASS	C		C	S	929	1.9	0.34	63	0.13	34.3
77-004	SMALLMOUTH BASS	C	M	C	F	5604	11.2	2.07	457	0.96	40.8
77-005	SPOTTED BASS	C		C	F	10075	20.2	3.73	532	1.12	26.4
77-006	LARGEMOUTH BASS	C		C	F	3146	6.3	1.16	182	0.38	28.9
77-007	WARMOUTH SUNFISH	C		C	S	4	0.0	0.00	0	0.00	23.2
77-008	GREEN SUNFISH	I	T	C	S	7089	14.2	2.62	149	0.31	10.5

Appendix B-2: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Scioto River*

Years: 1979; 1980; 1981; 1982; 1984; 1985; 1986; 1987; 1988; 1989; 1990; 1991; 1992; 1993; 1994; 1995; 1996; 1997; 1998; 1999;

Number of Samples: 1069 Data Sources: 01; 20; 30; 31; 99; Data Types: A; B; C; G; N; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
77-009	BLUEGILL SUNFISH	I	P	C	S	13030	26.1	4.82	346	0.73	13.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	956	1.9	0.35	9	0.02	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	14869	29.7	5.50	374	0.79	12.5
77-012	REDEAR SUNFISH	I		C	E	28	0.1	0.01	2	0.00	36.6
77-013	PUMPKINSEED SUNFISH	I	P	C	S	672	1.3	0.25	17	0.04	12.9
77-014	BLUEGILL X PUMPKINSEED					3	0.0	0.00	0	0.00	118.3
77-015	GREEN SF X BLUEGILL SF					337	0.7	0.12	19	0.04	29.0
77-016	GREEN SF X PUMPKINSEED					22	0.0	0.01	1	0.00	23.1
77-017	LONGEAR SF X BLUEGILL SF					10	0.0	0.00	0	0.00	42.0
77-018	BLUEGILL X ORANGESPOT					8	0.0	0.00	0	0.00	10.5
77-019	GREEN SF X ORANGESPOT SF					4	0.0	0.00	0	0.00	56.5
77-020	PUMPKINSEED X LONGEAR SF					3	0.0	0.00	0	0.00	57.0
77-021	GREEN SF X LONGEAR SF					153	0.3	0.06	5	0.01	17.4
77-028	BLUEGILL SF X REDEAR SF	I		C		13	0.0	0.00	0	0.00	38.1
77-099						20	0.0	0.01	0	0.00	0.0
77-998	GREEN SF X HYBRID					787	1.6	0.29	54	0.11	34.5
77-999	HYBRID X SUNFISH					280	0.6	0.10	14	0.03	25.2
78-001	ORIENTAL WEATHERFISH	I		C	E	1	0.0	0.00	0	0.00	10.0
80-001	SAUGER	P		S	F	1553	3.1	0.57	480	1.01	154.7
80-002	WALLEYE	P		S	F	71	0.1	0.03	57	0.12	402.8
80-003	YELLOW PERCH			M		8	0.0	0.00	0	0.00	7.1
80-004	DUSKY DARTER	I	M	S	D	102	0.2	0.04	1	0.00	4.9
80-005	BLACKSIDE DARTER	I		S	D	22	0.0	0.01	0	0.00	3.2
80-007	SLENDERHEAD DARTER	I	R	S	D	482	1.0	0.18	2	0.00	2.4
80-011	LOGPERCH	I	M	S	D	1955	2.0	0.72	17	0.07	8.7
80-013	EASTERN SAND DARTER	I	R	S	D	3	0.0	0.00	0	0.00	2.0
80-014	JOHNNY DARTER	I		C	D	103	0.2	0.04	0	0.00	1.3
80-015	GREENSIDE DARTER	I	M	S	D	1862	1.9	0.69	5	0.02	2.7
80-016	BANDED DARTER	I	I	S	D	1092	1.1	0.40	1	0.01	1.2
80-017	VARIEGATE DARTER	I	I	S	D	1135	2.3	0.42	4	0.01	1.8
80-018	SPOTTED DARTER	I	R	S	D	3	0.0	0.00	0	0.00	3.6
80-019	BLUEBREAST DARTER	I	R	S	D	201	0.2	0.07	0	0.00	1.8
80-020	TIPPECANOE DARTER	I	R	S	D	223	0.2	0.08	0	0.00	0.8
80-022	RAINBOW DARTER	I	M	S	D	564	0.6	0.21	0	0.00	1.2
80-023	ORANGETHROAT DARTER	I		S	D	43	0.1	0.02	0	0.00	1.3
80-024	FANTAIL DARTER	I		C	D	37	0.0	0.01	0	0.00	1.9
80-026	SAUGER X WALLEYE	P			E	1078	2.2	0.40	606	1.27	281.1
85-001	FRESHWATER DRUM		P	M		6730	13.5	2.49	3233	6.80	240.2
90-002	MOTTLED SCULPIN	I		C		91	0.2	0.03	0	0.00	3.0
95-001	BROOK STICKLEBACK	I		C		2	0.0	0.00	0	0.00	15.0

Appendix B-2: Midwest Biodiversity Institute Fish Species List - Grand Totals

No Species: ** **Nat. Species:** 98 **Hybrids:** 16 **Total Counted:** 270465 **Total Rel. Wt. :** 47311

Appendix Table B- . Scioto River fish species downstream from Greenlawn Dam to Circleville by year range intervals 1979-2020.

Family Code	Species Code	Common Name	Latin Name	Ohio Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				1998-2003				2004-2007				2008-2013				2014-2020				
					Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	Rel. Number	% of Catch	Rank by Number	Number of Samples	
80	018	SPOTTED DARTER	<i>Etheostoma maculatum</i>	R	0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	1.61	0.01		81	1	2.00	0.00		1	2.00	0.00		1	0.00	0.00		0
95	001	BROOK STICKLEBACK	<i>Culaea inconstans</i>		0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	0.00	0.00		0	4.00	0.01		79	1	0.00	0.00		0
		Total Number			12957		44	1338	129840		77	3358	168490		77	7944	97362		82	4645	28382		83	1319	120849		78	4017	41898	28382		79	1793	47009		93	2792
		Number of Samples			122				175				318				144				37				140				52					80			

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR01 River: 02-001 Scioto River RM: 136.00 Date: 08/28/2020
 Time Fished: 2995 Distance: 0.500 Drainge (sq mi): 1050.0 Depth: 0
 Location: Dst. 5th Ave. adj. to old gravel pits Lat: 39.98479 Long: -83.06617

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.37	2800	1.40	1400.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.37	6000	3.00	3000.0
40-009	BLACK REDHORSE	I	I	S	R	3	6.0	1.10	5500	2.75	916.6
40-010	GOLDEN REDHORSE	I	M	S	R	7	14.0	2.56	12140	6.07	867.1
40-013	RIVER REDHORSE	I	I	S	R	26	52.0	9.52	140700	70.32	2705.7
40-015	NORTHERN HOG SUCKER	I	M	S	R	9	18.0	3.30	4000	2.00	222.2
43-005	RIVER CHUB	I	I	N	N	2	4.0	0.73	160	0.08	40.0
43-032	SPOTFIN SHINER	I		M	N	17	34.0	6.23	180	0.09	5.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	5	10.0	1.83	40	0.02	4.0
43-044	CENTRAL STONEROLLER	H		N	N	2	4.0	0.73	40	0.02	10.0
47-002	CHANNEL CATFISH			C	F	5	10.0	1.83	21900	10.95	2190.0
47-004	YELLOW BULLHEAD	I	T	C		2	4.0	0.73	200	0.10	50.0
47-008	STONECAT MADTOM	I	I	C		2	4.0	0.73	20	0.01	5.0
47-012	BRINDLED MADTOM	I	I	C		7	14.0	2.56	60	0.03	4.2
77-003	ROCK BASS	C		C	S	1	2.0	0.37	100	0.05	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	21	42.0	7.69	2220	1.11	52.8
77-006	LARGEMOUTH BASS	C		C	F	5	10.0	1.83	160	0.08	16.0
77-008	GREEN SUNFISH	I	T	C	S	48	96.0	17.58	400	0.20	4.1
77-009	BLUEGILL SUNFISH	I	P	C	S	55	110.0	20.15	1460	0.73	13.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	23	46.0	8.42	220	0.11	4.7
77-011	LONGEAR SUNFISH	I	M	C	S	4	8.0	1.47	80	0.04	10.0
77-015	GREEN SF X BLUEGILL SF					4	8.0	1.47	280	0.14	35.0
80-011	LOGPERCH	I	M	S	D	4	8.0	1.47	100	0.05	12.5
80-014	JOHNNY DARTER	I		C	D	1	2.0	0.37	2	0.00	1.0
80-015	GREENSIDE DARTER	I	M	S	D	8	16.0	2.93	80	0.04	5.0
80-016	BANDED DARTER	I	I	S	D	5	10.0	1.83	20	0.01	2.0
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.37	4	0.00	2.0
80-024	FANTAIL DARTER	I		C	D	3	6.0	1.10	6	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.37	1200	0.60	600.0

No Species: 27 **Nat. Species:** 27 **Hybrids:** 2 **Total Counted:** 273 **Total Rel. Wt. :** 200072
IBI: 52.0 **MIwb:** 9.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR01 River: 02-001 Scioto River RM: 136.00 Date: 10/08/2020
 Time Fished: 2561 Distance: 0.500 Drainge (sq mi): 1050.0 Depth: 0
 Location: Dst. 5th Ave. adj. to old gravel pits Lat: 39.98479 Long: -83.06617

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		19	38.0	7.25	10720	12.03	282.1
40-009	BLACK REDHORSE	I	I	S	R	2	4.0	0.76	5000	5.61	1250.0
40-010	GOLDEN REDHORSE	I	M	S	R	7	14.0	2.67	6680	7.50	477.1
40-013	RIVER REDHORSE	I	I	S	R	3	6.0	1.15	18208	20.43	3034.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	4	8.0	1.53	4020	4.51	502.5
43-005	RIVER CHUB	I	I	N	N	1	2.0	0.38	12	0.01	6.0
43-022	ROSYFACE SHINER	I	I	S	N	13	26.0	4.96	100	0.11	3.8
43-032	SPOTFIN SHINER	I		M	N	23	46.0	8.78	320	0.36	6.9
43-043	BLUNTNOSE MINNOW	O	T	C	N	14	28.0	5.34	120	0.13	4.2
43-044	CENTRAL STONEROLLER	H		N	N	27	54.0	10.31	940	1.05	17.4
47-002	CHANNEL CATFISH			C	F	2	4.0	0.76	4200	4.71	1050.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.76	2400	2.69	600.0
47-008	STONECAT MADTOM	I	I	C		2	4.0	0.76	40	0.04	10.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.38	4	0.00	2.0
77-003	ROCK BASS	C		C	S	1	2.0	0.38	120	0.13	60.0
77-004	SMALLMOUTH BASS	C	M	C	F	32	64.0	12.21	18540	20.81	289.6
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.38	160	0.18	80.0
77-008	GREEN SUNFISH	I	T	C	S	18	36.0	6.87	380	0.43	10.5
77-009	BLUEGILL SUNFISH	I	P	C	S	47	94.0	17.94	1140	1.28	12.1
77-010	ORANGESPOTTED SUNFISH	I		C	S	4	8.0	1.53	100	0.11	12.5
77-011	LONGEAR SUNFISH	I	M	C	S	6	12.0	2.29	160	0.18	13.3
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.38	80	0.09	40.0
80-011	LOGPERCH	I	M	S	D	13	26.0	4.96	240	0.27	9.2
80-015	GREENSIDE DARTER	I	M	S	D	2	4.0	0.76	8	0.01	2.0
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.76	6	0.01	1.5
80-022	RAINBOW DARTER	I	M	S	D	3	6.0	1.15	10	0.01	1.6
80-024	FANTAIL DARTER	I		C	D	1	2.0	0.38	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	11	22.0	4.20	15400	17.28	700.0

No Species: 25 **Nat. Species:** 26 **Hybrids:** 2 **Total Counted:** 262 **Total Rel. Wt. :** 89112

IBI: 50.0 **MIwb:** 9.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR02 River: 02-001 Scioto River RM: 133.25 Date: 08/04/2020
 Time Fished: 3281 Distance: 0.500 Drainge (sq mi): 1050.0 Depth: 0
 Location: dst. Dublin Rd. WTP dam Lat: 39.96704 Long: -83.03412

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		74	148.0	31.76	1640	2.01	11.0
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.86	3000	3.68	750.0
40-006						2	4.0	0.86	3200	3.93	800.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.43	3400	4.17	1700.0
40-009	BLACK REDHORSE	I	I	S	R	2	4.0	0.86	2600	3.19	650.0
40-010	GOLDEN REDHORSE	I	M	S	R	10	20.0	4.29	8400	10.30	420.0
40-013	RIVER REDHORSE	I	I	S	R	5	10.0	2.15	20400	25.02	2040.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	1	2.0	0.43	200	0.25	100.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.43	120	0.15	60.0
43-001	COMMON CARP	O	T	M	G	3	6.0	1.29	20400	25.02	3400.0
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.43	4	0.00	2.0
43-032	SPOTFIN SHINER	I		M	N	9	18.0	3.86	40	0.05	2.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	8	16.0	3.43	40	0.05	2.5
47-007	FLATHEAD CATFISH	P		C	F	3	6.0	1.29	3820	4.69	636.6
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.43	2	0.00	1.0
77-004	SMALLMOUTH BASS	C	M	C	F	31	62.0	13.30	5240	6.43	84.5
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.43	10	0.01	5.0
77-008	GREEN SUNFISH	I	T	C	S	12	24.0	5.15	360	0.44	15.0
77-009	BLUEGILL SUNFISH	I	P	C	S	51	102.0	21.89	1300	1.59	12.7
77-011	LONGEAR SUNFISH	I	M	C	S	7	14.0	3.00	130	0.16	9.2
77-015	GREEN SF X BLUEGILL SF					2	4.0	0.86	200	0.25	50.0
80-002	WALLEYE	P		S	F	2	4.0	0.86	3000	3.68	750.0
80-011	LOGPERCH	I	M	S	D	1	2.0	0.43	10	0.01	5.0
80-024	FANTAIL DARTER	I		C	D	1	2.0	0.43	4	0.00	2.0
85-001	FRESHWATER DRUM		P	M		2	4.0	0.86	4000	4.91	1000.0

No Species: 23 **Nat. Species:** 23 **Hybrids:** 1 **Total Counted:** 233 **Total Rel. Wt. :** 81520
IBI: 46.0 **MIwb:** 9.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR03 River: 02-001 Scioto River RM: 132.80 Date: 08/04/2020
 Time Fished: 3093 Distance: 0.500 Drainge (sq mi): 1070.0 Depth: 0
 Location: Dst. I-670 bridge Lat: 39.96663 Long: -83.02670

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		11	22.0	4.70	3400	2.71	154.5
40-004	SMALLMOUTH BUFFALO	I		M	C	1	2.0	0.43	2000	1.60	1000.0
40-005	QUILLBACK CARPSUCKER	O		M	C	3	6.0	1.28	1800	1.44	300.0
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.85	5000	3.99	1250.0
40-009	BLACK REDHORSE	I	I	S	R	5	10.0	2.14	5600	4.47	560.0
40-010	GOLDEN REDHORSE	I	M	S	R	29	58.0	12.39	31800	25.37	548.2
40-013	RIVER REDHORSE	I	I	S	R	12	24.0	5.13	43960	35.07	1831.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	3	6.0	1.28	700	0.56	116.6
43-001	COMMON CARP	O	T	M	G	1	2.0	0.43	5000	3.99	2500.0
43-015	SUCKERMOUTH MINNOW	I		S	N	1	2.0	0.43	16	0.01	8.0
43-021	SILVER SHINER	I	I	S	N	4	8.0	1.71	12	0.01	1.5
43-032	SPOTFIN SHINER	I		M	N	14	28.0	5.98	140	0.11	5.0
43-034	SAND SHINER	I	M	M	N	10	20.0	4.27	40	0.03	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.43	4	0.00	2.0
43-044	CENTRAL STONEROLLER	H		N	N	4	8.0	1.71	40	0.03	5.0
47-002	CHANNEL CATFISH			C	F	4	8.0	1.71	6920	5.52	865.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.43	4000	3.19	2000.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.43	2	0.00	1.0
77-003	ROCK BASS	C		C	S	1	2.0	0.43	200	0.16	100.0
77-004	SMALLMOUTH BASS	C	M	C	F	74	148.0	31.62	4140	3.30	27.9
77-008	GREEN SUNFISH	I	T	C	S	8	16.0	3.42	200	0.16	12.5
77-009	BLUEGILL SUNFISH	I	P	C	S	25	50.0	10.68	600	0.48	12.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.85	40	0.03	10.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.43	30	0.02	15.0
80-002	WALLEYE	P		S	F	8	16.0	3.42	9640	7.69	602.5
80-011	LOGPERCH	I	M	S	D	1	2.0	0.43	20	0.02	10.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.43	4	0.00	2.0
80-019	BLUEBREAST DARTER	I	R	S	D	3	6.0	1.28	16	0.01	2.6
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.43	4	0.00	2.0
80-024	FANTAIL DARTER	I		C	D	2	4.0	0.85	6	0.00	1.5

No Species: 28 **Nat. Species:** 28 **Hybrids:** 1 **Total Counted:** 234 **Total Rel. Wt. :** 125334
IBI: 56.0 **MIwb:** 9.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR04 River: 02-001 Scioto River RM: 131.95 Date: 07/30/2020
 Time Fished: 2798 Distance: 0.500 Drainge (sq mi): 1610.0 Depth: 0
 Location: dst. RR bridge Lat: 39.96445 Long: -83.01282

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		2	4.0	0.88	100	0.19	25.0
20-003	GIZZARD SHAD	O		M		16	32.0	7.02	3600	6.96	112.5
40-005	QUILLBACK CARPSUCKER	O		M	C	4	8.0	1.75	4410	8.53	551.2
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.44	2800	5.42	1400.0
40-010	GOLDEN REDHORSE	I	M	S	R	31	62.0	13.60	15000	29.01	241.9
40-015	NORTHERN HOG SUCKER	I	M	S	R	2	4.0	0.88	240	0.46	60.0
43-001	COMMON CARP	O	T	M	G	2	4.0	0.88	9000	17.41	2250.0
43-032	SPOTFIN SHINER	I		M	N	3	6.0	1.32	10	0.02	1.6
43-043	BLUNTNOSE MINNOW	O	T	C	N	20	40.0	8.77	60	0.12	1.5
47-002	CHANNEL CATFISH			C	F	2	4.0	0.88	3600	6.96	900.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.44	1900	3.67	950.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.44	2	0.00	1.0
77-003	ROCK BASS	C		C	S	1	2.0	0.44	200	0.39	100.0
77-004	SMALLMOUTH BASS	C	M	C	F	12	24.0	5.26	5820	11.26	242.5
77-006	LARGEMOUTH BASS	C		C	F	4	8.0	1.75	120	0.23	15.0
77-008	GREEN SUNFISH	I	T	C	S	38	76.0	16.67	600	1.16	7.8
77-009	BLUEGILL SUNFISH	I	P	C	S	52	104.0	22.81	1800	3.48	17.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	3	6.0	1.32	30	0.06	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	23	46.0	10.09	250	0.48	5.4
77-015	GREEN SF X BLUEGILL SF					3	6.0	1.32	60	0.12	10.0
80-011	LOGPERCH	I	M	S	D	6	12.0	2.63	104	0.20	8.6
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.44	2000	3.87	1000.0

No Species: 19 **Nat. Species:** 19 **Hybrids:** 2 **Total Counted:** 228 **Total Rel. Wt. :** 51706

IBI: 36.0 **MIwb:** 8.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR04 River: 02-001 Scioto River RM: 131.95 Date: 10/05/2020
 Time Fished: 2340 Distance: 0.500 Drainge (sq mi): 1610.0 Depth: 0
 Location: dst. RR bridge Lat: 39.96445 Long: -83.01282

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		15	30.0	4.31	2980	5.45	99.3
40-004	SMALLMOUTH BUFFALO	I		M	C	2	4.0	0.57	7000	12.81	1750.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.29	2400	4.39	1200.0
40-010	GOLDEN REDHORSE	I	M	S	R	18	36.0	5.17	6520	11.93	181.1
40-015	NORTHERN HOG SUCKER	I	M	S	R	2	4.0	0.57	200	0.37	50.0
43-001	COMMON CARP	O	T	M	G	10	20.0	2.87	27200	49.78	1360.0
43-021	SILVER SHINER	I	I	S	N	2	4.0	0.57	8	0.01	2.0
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.29	2	0.00	1.0
43-032	SPOTFIN SHINER	I		M	N	16	32.0	4.60	90	0.16	2.8
43-034	SAND SHINER	I	M	M	N	15	30.0	4.31	20	0.04	0.6
43-041	BULLHEAD MINNOW	O		C	N	5	10.0	1.44	20	0.04	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	30	60.0	8.62	80	0.15	1.3
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.29	8	0.01	4.0
70-001	BROOK SILVERSIDE	I	M	M		31	62.0	8.91	160	0.29	2.5
77-001	WHITE CRAPPIE	I		C	S	5	10.0	1.44	60	0.11	6.0
77-003	ROCK BASS	C		C	S	4	8.0	1.15	600	1.10	75.0
77-004	SMALLMOUTH BASS	C	M	C	F	19	38.0	5.46	1500	2.75	39.4
77-006	LARGEMOUTH BASS	C		C	F	7	14.0	2.01	640	1.17	45.7
77-008	GREEN SUNFISH	I	T	C	S	35	70.0	10.06	760	1.39	10.8
77-009	BLUEGILL SUNFISH	I	P	C	S	61	122.0	17.53	1860	3.40	15.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	12	24.0	3.45	160	0.29	6.6
77-011	LONGEAR SUNFISH	I	M	C	S	38	76.0	10.92	740	1.35	9.7
77-012	REDEAR SUNFISH	I		C	E	2	4.0	0.57	120	0.22	30.0
77-015	GREEN SF X BLUEGILL SF					7	14.0	2.01	240	0.44	17.1
80-011	LOGPERCH	I	M	S	D	3	6.0	0.86	60	0.11	10.0
80-022	RAINBOW DARTER	I	M	S	D	3	6.0	0.86	10	0.02	1.6
80-024	FANTAIL DARTER	I		C	D	2	4.0	0.57	6	0.01	1.5
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.29	1200	2.20	600.0

No Species: 25 **Nat. Species:** 24 **Hybrids:** 2 **Total Counted:** 348 **Total Rel. Wt. :** 54644

IBI: 44.0 **MIwb:** 8.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR05 River: 02-001 Scioto River RM: 130.45 Date: 07/30/2020
 Time Fished: 2930 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Ust. Greenlawn Ave. dam Lat: 39.94984 Long: -83.01386

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		212	424.0	49.53	2800	3.82	6.6
40-004	SMALLMOUTH BUFFALO	I		M	C	12	24.0	2.80	15400	20.98	641.6
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.23	2000	2.73	1000.0
40-006						1	2.0	0.23	1800	2.45	900.0
40-010	GOLDEN REDHORSE	I	M	S	R	19	38.0	4.44	10600	14.44	278.9
40-018	SPOTTED SUCKER	I		S	R	3	6.0	0.70	1580	2.15	263.3
43-001	COMMON CARP	O	T	M	G	1	2.0	0.23	5000	6.81	2500.0
43-020	EMERALD SHINER	I		M	N	1	2.0	0.23	4	0.01	2.0
43-032	SPOTFIN SHINER	I		M	N	1	2.0	0.23	4	0.01	2.0
43-041	BULLHEAD MINNOW	O		C	N	13	26.0	3.04	40	0.05	1.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	9	18.0	2.10	40	0.05	2.2
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.23	23000	31.34	11500.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.23	2	0.00	1.0
77-003	ROCK BASS	C		C	S	1	2.0	0.23	200	0.27	100.0
77-004	SMALLMOUTH BASS	C	M	C	F	7	14.0	1.64	2928	3.99	209.1
77-006	LARGEMOUTH BASS	C		C	F	9	18.0	2.10	4800	6.54	266.6
77-008	GREEN SUNFISH	I	T	C	S	24	48.0	5.61	900	1.23	18.7
77-009	BLUEGILL SUNFISH	I	P	C	S	75	150.0	17.52	1700	2.32	11.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	11	22.0	2.57	100	0.14	4.5
77-011	LONGEAR SUNFISH	I	M	C	S	22	44.0	5.14	340	0.46	7.7
77-015	GREEN SF X BLUEGILL SF					2	4.0	0.47	140	0.19	35.0
80-011	LOGPERCH	I	M	S	D	2	4.0	0.47	16	0.02	4.0

No Species: 20 **Nat. Species:** 20 **Hybrids:** 1 **Total Counted:** 428 **Total Rel. Wt. :** 73394

IBI: 38.0 **MIwb:** 9.2

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR05 River: 02-001 Scioto River RM: 130.45 Date: 10/05/2020

Time Fished: 2355 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0

Location: Ust. Greenlawn Ave. dam Lat: 39.94984 Long: -83.01386

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		16	32.0	4.58	1520	7.29	47.5
40-010	GOLDEN REDHORSE	I	M	S	R	8	16.0	2.29	120	0.58	7.5
40-018	SPOTTED SUCKER	I		S	R	3	6.0	0.86	220	1.05	36.6
43-001	COMMON CARP	O	T	M	G	3	6.0	0.86	14400	69.03	2400.0
43-003	GOLDEN SHINER	I	T	M	N	3	6.0	0.86	20	0.10	3.3
43-021	SILVER SHINER	I	I	S	N	2	4.0	0.57	12	0.06	3.0
43-041	BULLHEAD MINNOW	O		C	N	44	88.0	12.61	170	0.81	1.9
43-043	BLUNTNOSE MINNOW	O	T	C	N	55	110.0	15.76	160	0.77	1.4
70-001	BROOK SILVERSIDE	I	M	M		44	88.0	12.61	200	0.96	2.2
77-001	WHITE CRAPPIE	I		C	S	6	12.0	1.72	60	0.29	5.0
77-004	SMALLMOUTH BASS	C	M	C	F	4	8.0	1.15	160	0.77	20.0
77-006	LARGEMOUTH BASS	C		C	F	15	30.0	4.30	2000	9.59	66.6
77-008	GREEN SUNFISH	I	T	C	S	26	52.0	7.45	400	1.92	7.6
77-009	BLUEGILL SUNFISH	I	P	C	S	91	182.0	26.07	960	4.60	5.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	3	6.0	0.86	60	0.29	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	22	44.0	6.30	300	1.44	6.8
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.29	60	0.29	30.0
80-011	LOGPERCH	I	M	S	D	3	6.0	0.86	40	0.19	6.6

No Species: 16 **Nat. Species:** 16 **Hybrids:** 1 **Total Counted:** 349 **Total Rel. Wt. :** 20862

IBI: 34.0 **MIwb:** 7.1

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR06 River: 02-001 Scioto River RM: 129.23 Date: 07/31/2020
 Time Fished: 3427 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. Greenlawn Ave. dam Lat: 39.93847 Long: -82.99934

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.15	800	0.56	400.0
20-003	GIZZARD SHAD	O		M		324	648.0	48.21	5600	3.95	8.6
40-002	BIGMOUTH BUFFALO	I		M	C	1	2.0	0.15	5000	3.53	2500.0
40-003	BLACK BUFFALO	I		M	C	3	6.0	0.45	11200	7.91	1866.6
40-004	SMALLMOUTH BUFFALO	I		M	C	15	30.0	2.23	33500	23.66	1116.6
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.15	1400	0.99	700.0
40-006						21	42.0	3.13	32000	22.60	761.9
40-008	SILVER REDHORSE	I	M	S	R	3	6.0	0.45	9600	6.78	1600.0
40-010	GOLDEN REDHORSE	I	M	S	R	14	28.0	2.08	11500	8.12	410.7
40-015	NORTHERN HOG SUCKER	I	M	S	R	2	4.0	0.30	1000	0.71	250.0
43-009	GRAVEL CHUB	I	M	S	N	7	14.0	1.04	36	0.03	2.5
43-015	SUCKERMOUTH MINNOW	I		S	N	8	16.0	1.19	24	0.02	1.5
43-020	EMERALD SHINER	I		M	N	3	6.0	0.45	10	0.01	1.6
43-021	SILVER SHINER	I	I	S	N	2	4.0	0.30	6	0.00	1.5
43-031	STEELCOLOR SHINER	I	P	M	N	31	62.0	4.61	380	0.27	6.1
43-032	SPOTFIN SHINER	I		M	N	36	72.0	5.36	240	0.17	3.3
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	0.30	10	0.01	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	16	32.0	2.38	40	0.03	1.2
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.15	8	0.01	4.0
43-063	CHANNEL SHINER	I	I	M	N	19	38.0	2.83	60	0.04	1.5
47-002	CHANNEL CATFISH			C	F	1	2.0	0.15	4	0.00	2.0
47-007	FLATHEAD CATFISH	P		C	F	3	6.0	0.45	6	0.00	1.0
47-008	STONECAT MADTOM	I	I	C		3	6.0	0.45	40	0.03	6.6
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.15	2	0.00	1.0
74-001	WHITE BASS	P		M	F	2	4.0	0.30	500	0.35	125.0
77-002	BLACK CRAPPIE	I		C	S	4	8.0	0.60	2100	1.48	262.5
77-004	SMALLMOUTH BASS	C	M	C	F	9	18.0	1.34	1412	1.00	78.4
77-006	LARGEMOUTH BASS	C		C	F	6	12.0	0.89	3148	2.22	262.3
77-008	GREEN SUNFISH	I	T	C	S	2	4.0	0.30	80	0.06	20.0
77-009	BLUEGILL SUNFISH	I	P	C	S	28	56.0	4.17	1100	0.78	19.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	7	14.0	1.04	40	0.03	2.8
77-011	LONGEAR SUNFISH	I	M	C	S	16	32.0	2.38	220	0.16	6.8
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.15	100	0.07	50.0
77-015	GREEN SF X BLUEGILL SF					3	6.0	0.45	300	0.21	50.0
80-001	SAUGER	P		S	F	1	2.0	0.15	400	0.28	200.0
80-007	SLENDERHEAD DARTER	I	R	S	D	27	54.0	4.02	200	0.14	3.7
80-011	LOGPERCH	I	M	S	D	12	24.0	1.79	104	0.07	4.3
80-016	BANDED DARTER	I	I	S	D	3	6.0	0.45	8	0.01	1.3
80-019	BLUEBREAST DARTER	I	R	S	D	12	24.0	1.79	20	0.01	0.8
80-020	TIPPECANOE DARTER	I	R	S	D	5	10.0	0.74	10	0.01	1.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR06 River: 02-001 Scioto River RM: 129.23 Date: 07/31/2020
 Time Fished: 3427 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. Greenlawn Ave. dam Lat: 39.93847 Long: -82.99934

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.15	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	7	14.0	1.04	7500	5.30	535.7
85-001	FRESHWATER DRUM		P	M		8	16.0	1.19	11900	8.40	743.7

No Species: 40 **Nat. Species:** 40 **Hybrids:** 2 **Total Counted:** 672 **Total Rel. Wt. :** 141612
IBI: 52.0 **MIwb:** 10.9

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR06 River: 02-001 Scioto River RM: 129.23 Date: 10/14/2020
 Time Fished: 3091 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. Greenlawn Ave. dam Lat: 39.93847 Long: -82.99934

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		5	10.0	1.96	10000	7.68	1000.0
20-003	GIZZARD SHAD	O		M		5	10.0	1.96	1200	0.92	120.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.39	14400	11.05	7200.0
40-004	SMALLMOUTH BUFFALO	I		M	C	8	16.0	3.14	24400	18.73	1525.0
40-006						5	10.0	1.96	8800	6.75	880.0
40-010	GOLDEN REDHORSE	I	M	S	R	7	14.0	2.75	7400	5.68	528.5
40-015	NORTHERN HOG SUCKER	I	M	S	R	4	8.0	1.57	220	0.17	27.5
40-023	SMALLMOUTH REDHORSE	I	M	S	R	1	2.0	0.39	2000	1.54	1000.0
43-001	COMMON CARP	O	T	M	G	1	2.0	0.39	7600	5.83	3800.0
43-008	STREAMLINE CHUB	I	R	S	N	7	14.0	2.75	80	0.06	5.7
43-009	GRAVEL CHUB	I	M	S	N	6	12.0	2.35	100	0.08	8.3
43-020	EMERALD SHINER	I		M	N	13	26.0	5.10	40	0.03	1.5
43-022	ROSYFACE SHINER	I	I	S	N	2	4.0	0.78	4	0.00	1.0
43-032	SPOTFIN SHINER	I		M	N	3	6.0	1.18	30	0.02	5.0
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.39	4	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	3	6.0	1.18	20	0.02	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	3	6.0	1.18	12	0.01	2.0
47-002	CHANNEL CATFISH			C	F	3	6.0	1.18	40	0.03	6.6
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.39	2000	1.54	1000.0
47-008	STONECAT MADTOM	I	I	C		6	12.0	2.35	240	0.18	20.0
70-001	BROOK SILVERSIDE	I	M	M		3	6.0	1.18	12	0.01	2.0
74-005	Striped X White Bass				E	2	4.0	0.78	10600	8.14	2650.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	0.78	760	0.58	190.0
77-003	ROCK BASS	C		C	S	4	8.0	1.57	400	0.31	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	11	22.0	4.31	3780	2.90	171.8
77-005	SPOTTED BASS	C		C	F	3	6.0	1.18	40	0.03	6.6
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.39	380	0.29	190.0
77-008	GREEN SUNFISH	I	T	C	S	6	12.0	2.35	120	0.09	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	20	40.0	7.84	920	0.71	23.0
77-011	LONGEAR SUNFISH	I	M	C	S	34	68.0	13.33	620	0.48	9.1
77-015	GREEN SF X BLUEGILL SF					6	12.0	2.35	360	0.28	30.0
80-001	SAUGER	P		S	F	1	2.0	0.39	800	0.61	400.0
80-005	BLACKSIDE DARTER	I		S	D	1	2.0	0.39	2	0.00	1.0
80-007	SLENDERHEAD DARTER	I	R	S	D	8	16.0	3.14	80	0.06	5.0
80-011	LOGPERCH	I	M	S	D	21	42.0	8.24	280	0.21	6.6
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.39	10	0.01	5.0
80-016	BANDED DARTER	I	I	S	D	11	22.0	4.31	40	0.03	1.8
80-019	BLUEBREAST DARTER	I	R	S	D	7	14.0	2.75	60	0.05	4.2
80-020	TIPPECANOE DARTER	I	R	S	D	1	2.0	0.39	2	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	4	8.0	1.57	14	0.01	1.7

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR06 River: 02-001 Scioto River RM: 129.23 Date: 10/14/2020
 Time Fished: 3091 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. Greenlawn Ave. dam Lat: 39.93847 Long: -82.99934

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-024	FANTAIL DARTER	I		C	D	3	6.0	1.18	8	0.01	1.3
80-026	SAUGER X WALLEYE	P			E	15	30.0	5.88	16400	12.59	546.6
85-001	FRESHWATER DRUM		P	M		5	10.0	1.96	16000	12.28	1600.0

No Species: 39 **Nat. Species:** 39 **Hybrids:** 3 **Total Counted:** 255 **Total Rel. Wt. :** 130278
IBI: 54.0 **MIwb:** 10.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR07 River: 02-001 Scioto River RM: 127.60 Date: 08/25/2020
 Time Fished: 3277 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. 104 Lat: 39.91664 Long: -83.00948

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		3	6.0	0.58	1140	0.47	190.0
20-003	GIZZARD SHAD	O		M		19	38.0	3.68	2500	1.03	65.7
40-004	SMALLMOUTH BUFFALO	I		M	C	27	54.0	5.23	77000	31.87	1425.9
40-006						40	80.0	7.75	62400	25.83	780.0
40-009	BLACK REDHORSE	I	I	S	R	1	2.0	0.19	640	0.26	320.0
40-010	GOLDEN REDHORSE	I	M	S	R	10	20.0	1.94	22040	9.12	1102.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	5	10.0	0.97	1580	0.65	158.0
40-018	SPOTTED SUCKER	I		S	R	8	16.0	1.55	120	0.05	7.5
40-023	SMALLMOUTH REDHORSE	I	M	S	R	1	2.0	0.19	1400	0.58	700.0
43-001	COMMON CARP	O	T	M	G	6	12.0	1.16	16400	6.79	1366.6
43-007	BIGEYE CHUB	I	I	S	N	3	6.0	0.58	8	0.00	1.3
43-008	STREAMLINE CHUB	I	R	S	N	7	14.0	1.36	160	0.07	11.4
43-009	GRAVEL CHUB	I	M	S	N	23	46.0	4.46	160	0.07	3.4
43-015	SUCKERMOUTH MINNOW	I		S	N	38	76.0	7.36	260	0.11	3.4
43-020	EMERALD SHINER	I		M	N	4	8.0	0.78	24	0.01	3.0
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.19	6	0.00	3.0
43-025	STRIPED SHINER	I		S	N	1	2.0	0.19	4	0.00	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	19	38.0	3.68	150	0.06	3.9
43-032	SPOTFIN SHINER	I		M	N	32	64.0	6.20	200	0.08	3.1
43-034	SAND SHINER	I	M	M	N	11	22.0	2.13	40	0.02	1.8
43-041	BULLHEAD MINNOW	O		C	N	9	18.0	1.74	40	0.02	2.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	10	20.0	1.94	48	0.02	2.4
43-044	CENTRAL STONEROLLER	H		N	N	7	14.0	1.36	40	0.02	2.8
43-063	CHANNEL SHINER	I	I	M	N	52	104.0	10.08	180	0.07	1.7
47-002	CHANNEL CATFISH			C	F	1	2.0	0.19	4600	1.90	2300.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.19	3000	1.24	1500.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.19	6	0.00	3.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.19	2	0.00	1.0
77-004	SMALLMOUTH BASS	C	M	C	F	3	6.0	0.58	20	0.01	3.3
77-005	SPOTTED BASS	C		C	F	5	10.0	0.97	934	0.39	93.4
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	0.58	80	0.03	13.3
77-009	BLUEGILL SUNFISH	I	P	C	S	30	60.0	5.81	1000	0.41	16.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	10	20.0	1.94	100	0.04	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	74	148.0	14.34	1650	0.68	11.1
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.19	20	0.01	10.0
80-001	SAUGER	P		S	F	1	2.0	0.19	1000	0.41	500.0
80-007	SLENDERHEAD DARTER	I	R	S	D	3	6.0	0.58	10	0.00	1.6
80-011	LOGPERCH	I	M	S	D	13	26.0	2.52	200	0.08	7.6
80-015	GREENSIDE DARTER	I	M	S	D	4	8.0	0.78	20	0.01	2.5
80-016	BANDED DARTER	I	I	S	D	5	10.0	0.97	10	0.00	1.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR07 River: 02-001 Scioto River RM: 127.60 Date: 08/25/2020
 Time Fished: 3277 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. 104 Lat: 39.91664 Long: -83.00948

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-019	BLUEBREAST DARTER	I	R	S	D	4	8.0	0.78	20	0.01	2.5
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.19	6	0.00	3.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.19	1200	0.50	600.0
85-001	FRESHWATER DRUM		P	M		17	34.0	3.29	41200	17.05	1211.7
No Species: 41		Nat. Species: 41		Hybrids: 2		Total Counted: 516		Total Rel. Wt. :		241618	
IBI: 50.0		MIwb: 11.0									

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR07 River: 02-001 Scioto River RM: 127.60 Date: 10/14/2020
 Time Fished: 3001 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0
 Location: Dst. 104 Lat: 39.91664 Long: -83.00948

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.23	800	0.36	400.0
20-003	GIZZARD SHAD	O		M		18	36.0	4.16	3760	1.70	104.4
40-003	BLACK BUFFALO	I		M	C	5	10.0	1.15	21200	9.60	2120.0
40-004	SMALLMOUTH BUFFALO	I		M	C	11	22.0	2.54	29600	13.40	1345.4
40-006						18	36.0	4.16	30800	13.95	855.5
40-009	BLACK REDHORSE	I	I	S	R	2	4.0	0.46	4000	1.81	1000.0
40-010	GOLDEN REDHORSE	I	M	S	R	16	32.0	3.70	25000	11.32	781.2
40-015	NORTHERN HOG SUCKER	I	M	S	R	5	10.0	1.15	3200	1.45	320.0
40-018	SPOTTED SUCKER	I		S	R	3	6.0	0.69	100	0.05	16.6
40-023	SMALLMOUTH REDHORSE	I	M	S	R	1	2.0	0.23	2200	1.00	1100.0
43-001	COMMON CARP	O	T	M	G	4	8.0	0.92	14800	6.70	1850.0
43-008	STREAMLINE CHUB	I	R	S	N	9	18.0	2.08	120	0.05	6.6
43-009	GRAVEL CHUB	I	M	S	N	31	62.0	7.16	420	0.19	6.7
43-015	SUCKERMOUTH MINNOW	I		S	N	68	136.0	15.70	860	0.39	6.3
43-020	EMERALD SHINER	I		M	N	22	44.0	5.08	70	0.03	1.5
43-021	SILVER SHINER	I	I	S	N	7	14.0	1.62	40	0.02	2.8
43-022	ROSYFACE SHINER	I	I	S	N	3	6.0	0.69	12	0.01	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	5	10.0	1.15	20	0.01	2.0
43-032	SPOTFIN SHINER	I		M	N	9	18.0	2.08	40	0.02	2.2
43-034	SAND SHINER	I	M	M	N	3	6.0	0.69	12	0.01	2.0
43-041	BULLHEAD MINNOW	O		C	N	7	14.0	1.62	30	0.01	2.1
43-043	BLUNTNOSE MINNOW	O	T	C	N	28	56.0	6.47	130	0.06	2.3
43-044	CENTRAL STONEROLLER	H		N	N	39	78.0	9.01	900	0.41	11.5
43-063	CHANNEL SHINER	I	I	M	N	5	10.0	1.15	20	0.01	2.0
47-002	CHANNEL CATFISH			C	F	4	8.0	0.92	7000	3.17	875.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.23	20	0.01	10.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.23	4	0.00	2.0
77-004	SMALLMOUTH BASS	C	M	C	F	14	28.0	3.23	280	0.13	10.0
77-005	SPOTTED BASS	C		C	F	1	2.0	0.23	20	0.01	10.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.23	2000	0.91	1000.0
77-009	BLUEGILL SUNFISH	I	P	C	S	11	22.0	2.54	600	0.27	27.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	6	12.0	1.39	120	0.05	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	13	26.0	3.00	360	0.16	13.8
80-001	SAUGER	P		S	F	6	12.0	1.39	7400	3.35	616.6
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.23	6	0.00	3.0
80-011	LOGPERCH	I	M	S	D	10	20.0	2.31	260	0.12	13.0
80-015	GREENSIDE DARTER	I	M	S	D	3	6.0	0.69	20	0.01	3.3
80-016	BANDED DARTER	I	I	S	D	4	8.0	0.92	10	0.00	1.2
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.23	2	0.00	1.0
80-020	TIPPECANOE DARTER	I	R	S	D	1	2.0	0.23	2	0.00	1.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR07 River: 02-001 Scioto River RM: 127.60 Date: 10/14/2020
 Time Fished: 3001 Distance: 0.500 Drainage (sq mi): 1620.0 Depth: 0
 Location: Dst. 104 Lat: 39.91664 Long: -83.00948

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.23	2	0.00	1.0
80-024	FANTAIL DARTER	I		C	D	4	8.0	0.92	20	0.01	2.5
80-026	SAUGER X WALLEYE	P			E	9	18.0	2.08	9400	4.26	522.2
85-001	FRESHWATER DRUM		P	M		21	42.0	4.85	55200	24.99	1314.2
No Species: 42		Nat. Species: 42		Hybrids: 1		Total Counted: 433		Total Rel. Wt. :		220860	
IBI: 52.0		MIwb: 11.2									

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR08.2 River: 02-001 Scioto River RM: 127.25 Date: 08/25/2020

Time Fished: 2683 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0

Location: Dst. OARS Outfall; ust. JP 001 Lat: 0.00000 Long: 0.00000

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		23	46.0	11.98	3500	2.76	76.0
40-004	SMALLMOUTH BUFFALO	I		M	C	18	36.0	9.38	41000	32.36	1138.8
40-006						22	44.0	11.46	34900	27.54	793.1
40-010	GOLDEN REDHORSE	I	M	S	R	3	6.0	1.56	2700	2.13	450.0
43-001	COMMON CARP	O	T	M	G	5	10.0	2.60	21500	16.97	2150.0
43-006	SILVER CHUB	I		M	N	1	2.0	0.52	40	0.03	20.0
43-007	BIGEYE CHUB	I	I	S	N	3	6.0	1.56	10	0.01	1.6
43-008	STREAMLINE CHUB	I	R	S	N	3	6.0	1.56	20	0.02	3.3
43-015	SUCKERMOUTH MINNOW	I		S	N	1	2.0	0.52	6	0.00	3.0
43-032	SPOTFIN SHINER	I		M	N	7	14.0	3.65	70	0.06	5.0
43-035	MIMIC SHINER	I	I	M	N	2	4.0	1.04	6	0.00	1.5
43-041	BULLHEAD MINNOW	O		C	N	9	18.0	4.69	80	0.06	4.4
43-043	BLUNTNOSE MINNOW	O	T	C	N	16	32.0	8.33	90	0.07	2.8
47-002	CHANNEL CATFISH			C	F	8	16.0	4.17	13600	10.73	850.0
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	4.17	380	0.30	23.7
77-005	SPOTTED BASS	C		C	F	1	2.0	0.52	350	0.28	175.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.52	440	0.35	220.0
77-008	GREEN SUNFISH	I	T	C	S	6	12.0	3.13	130	0.10	10.8
77-009	BLUEGILL SUNFISH	I	P	C	S	12	24.0	6.25	640	0.51	26.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	3	6.0	1.56	40	0.03	6.6
77-011	LONGEAR SUNFISH	I	M	C	S	28	56.0	14.58	400	0.32	7.1
80-001	SAUGER	P		S	F	4	8.0	2.08	3480	2.75	435.0
80-011	LOGPERCH	I	M	S	D	6	12.0	3.13	120	0.09	10.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.52	1000	0.79	500.0
85-001	FRESHWATER DRUM		P	M		1	2.0	0.52	2200	1.74	1100.0

No Species: 23 **Nat. Species:** 23 **Hybrids:** 1 **Total Counted:** 192 **Total Rel. Wt. :** 126702
IBI: 38.0 **MIwb:** 9.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR08.2 River: 02-001 Scioto River RM: 127.25 Date: 10/14/2020

Time Fished: 2480 Distance: 0.500 Drainge (sq mi): 1620.0 Depth: 0

Location: Dst. OARS Outfall; ust. JP 001 Lat: 0.00000 Long: 0.00000

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		61	122.0	25.42	5200	5.61	42.6
40-004	SMALLMOUTH BUFFALO	I		M	C	6	12.0	2.50	17800	19.20	1483.3
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.42	2000	2.16	1000.0
40-006						9	18.0	3.75	13600	14.67	755.5
40-010	GOLDEN REDHORSE	I	M	S	R	4	8.0	1.67	5200	5.61	650.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	1	2.0	0.42	800	0.86	400.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.42	20	0.02	10.0
43-001	COMMON CARP	O	T	M	G	3	6.0	1.25	17200	18.56	2866.6
43-008	STREAMLINE CHUB	I	R	S	N	7	14.0	2.92	92	0.10	6.5
43-020	EMERALD SHINER	I		M	N	1	2.0	0.42	6	0.01	3.0
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.42	8	0.01	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	1	2.0	0.42	8	0.01	4.0
43-032	SPOTFIN SHINER	I		M	N	6	12.0	2.50	40	0.04	3.3
43-041	BULLHEAD MINNOW	O		C	N	9	18.0	3.75	60	0.06	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.42	2	0.00	1.0
47-002	CHANNEL CATFISH			C	F	6	12.0	2.50	21400	23.09	1783.3
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.42	10	0.01	5.0
77-004	SMALLMOUTH BASS	C	M	C	F	13	26.0	5.42	240	0.26	9.2
77-005	SPOTTED BASS	C		C	F	9	18.0	3.75	160	0.17	8.8
77-008	GREEN SUNFISH	I	T	C	S	14	28.0	5.83	180	0.19	6.4
77-009	BLUEGILL SUNFISH	I	P	C	S	13	26.0	5.42	500	0.54	19.2
77-010	ORANGESPOTTED SUNFISH	I		C	S	7	14.0	2.92	100	0.11	7.1
77-011	LONGEAR SUNFISH	I	M	C	S	50	100.0	20.83	1000	1.08	10.0
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.42	100	0.11	50.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.42	60	0.06	30.0
80-001	SAUGER	P		S	F	2	4.0	0.83	2600	2.81	650.0
80-011	LOGPERCH	I	M	S	D	5	10.0	2.08	100	0.11	10.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.42	2	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	5	10.0	2.08	4200	4.53	420.0

No Species: 26 **Nat. Species:** 25 **Hybrids:** 2 **Total Counted:** 240 **Total Rel. Wt. :** 92688

IBI: 48.0 **MIwb:** 9.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SRJPMZ River: 02-001 Scioto River RM: 127.00 Date: 08/25/2020
 Time Fished: 538 Distance: 0.100 Drainge (sq mi): 1620.0 Depth: 0
 Location: Jackson Pike Mixing Zone Lat: 39.90653 Long: -83.00871

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-004	SMALLMOUTH BUFFALO	I		M	C	1	10.0	6.25	22000	38.92	2200.0
40-006						4	40.0	25.00	34000	60.15	850.0
43-008	STREAMLINE CHUB	I	R	S	N	1	10.0	6.25	30	0.05	3.0
43-020	EMERALD SHINER	I		M	N	1	10.0	6.25	20	0.04	2.0
43-032	SPOTFIN SHINER	I		M	N	2	20.0	12.50	50	0.09	2.5
43-034	SAND SHINER	I	M	M	N	3	30.0	18.75	60	0.11	2.0
77-004	SMALLMOUTH BASS	C	M	C	F	1	10.0	6.25	30	0.05	3.0
77-005	SPOTTED BASS	C		C	F	1	10.0	6.25	40	0.07	4.0
77-008	GREEN SUNFISH	I	T	C	S	1	10.0	6.25	200	0.35	20.0
77-011	LONGEAR SUNFISH	I	M	C	S	1	10.0	6.25	100	0.18	10.0

No Species: 10 **Nat. Species:** 10 **Hybrids:** 0 **Total Counted:** 16 **Total Rel. Wt. :** 56530
IBI: 34.0 **MIwb:** 7.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SRJPMZ River: 02-001 Scioto River RM: 127.00 Date: 10/13/2020

Time Fished: 506 Distance: 0.100 Drainge (sq mi): 1620.0 Depth: 0

Location: Jackson Pike Mixing Zone Lat: 39.90653 Long: -83.00871

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	10.0	3.33	10000	2.35	1000.0
40-003	BLACK BUFFALO	I		M	C	2	20.0	6.67	36000	8.46	1800.0
40-004	SMALLMOUTH BUFFALO	I		M	C	5	50.0	16.67	76500	17.97	1530.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	10.0	3.33	10000	2.35	1000.0
40-006						15	150.0	50.00	139000	32.65	926.6
43-001	COMMON CARP	O	T	M	G	1	10.0	3.33	58000	13.62	5800.0
43-007	BIGEYE CHUB	I	I	S	N	1	10.0	3.33	20	0.00	2.0
43-047	GRASS CARP			M	E	1	10.0	3.33	96000	22.55	9600.0
77-004	SMALLMOUTH BASS	C	M	C	F	2	20.0	6.67	150	0.04	7.5
80-011	LOGPERCH	I	M	S	D	1	10.0	3.33	60	0.01	6.0

No Species: 10 **Nat. Species:** 8 **Hybrids:** 0 **Total Counted:** 30 **Total Rel. Wt. :** 425730
IBI: 28.0 **MIwb:** 9.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR08 River: 02-001 Scioto River RM: 126.40 Date: 08/26/2020
 Time Fished: 2754 Distance: 0.500 Drainge (sq mi): 1630.0 Depth: 0
 Location: Dst. Jackson Pike WWTP & Upst Kian Run Lat: 39.90169 Long: -83.00330

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		7	14.0	2.76	800	0.59	57.1
40-004	SMALLMOUTH BUFFALO	I		M	C	8	16.0	3.15	22200	16.40	1387.5
40-005	QUILLBACK CARPSUCKER	O		M	C	3	6.0	1.18	4300	3.18	716.6
40-006						9	18.0	3.54	15700	11.60	872.2
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.39	5200	3.84	2600.0
40-010	GOLDEN REDHORSE	I	M	S	R	6	12.0	2.36	6860	5.07	571.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	2	4.0	0.79	60	0.04	15.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.39	50	0.04	25.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	4	8.0	1.57	5000	3.69	625.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.39	2	0.00	1.0
43-008	STREAMLINE CHUB	I	R	S	N	15	30.0	5.91	100	0.07	3.3
43-009	GRAVEL CHUB	I	M	S	N	3	6.0	1.18	20	0.01	3.3
43-020	EMERALD SHINER	I		M	N	5	10.0	1.97	22	0.02	2.2
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.39	2	0.00	1.0
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.39	2	0.00	1.0
43-031	STEELCOLOR SHINER	I	P	M	N	2	4.0	0.79	20	0.01	5.0
43-032	SPOTFIN SHINER	I		M	N	17	34.0	6.69	90	0.07	2.6
43-034	SAND SHINER	I	M	M	N	1	2.0	0.39	2	0.00	1.0
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	0.79	12	0.01	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	10	20.0	3.94	80	0.06	4.0
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.39	6	0.00	3.0
43-063	CHANNEL SHINER	I	I	M	N	24	48.0	9.45	114	0.08	2.3
47-002	CHANNEL CATFISH			C	F	10	20.0	3.94	44600	32.95	2230.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.39	23500	17.36	11750.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.39	2	0.00	1.0
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	3.15	2760	2.04	172.5
77-005	SPOTTED BASS	C		C	F	15	30.0	5.91	720	0.53	24.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.39	8	0.01	4.0
77-008	GREEN SUNFISH	I	T	C	S	12	24.0	4.72	180	0.13	7.5
77-009	BLUEGILL SUNFISH	I	P	C	S	16	32.0	6.30	600	0.44	18.7
77-010	ORANGESPOTTED SUNFISH	I		C	S	8	16.0	3.15	100	0.07	6.2
77-011	LONGEAR SUNFISH	I	M	C	S	30	60.0	11.81	760	0.56	12.6
80-007	SLENDERHEAD DARTER	I	R	S	D	6	12.0	2.36	40	0.03	3.3
80-011	LOGPERCH	I	M	S	D	12	24.0	4.72	120	0.09	5.0
80-015	GREENSIDE DARTER	I	M	S	D	4	8.0	1.57	20	0.01	2.5
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.79	6	0.00	1.5
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.39	4	0.00	2.0
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.39	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	2	4.0	0.79	1300	0.96	325.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

No Species: 37	Nat. Species: 38	Hybrids: 1	Total Counted: 254	Total Rel. Wt. : 135366
IBI: 54.0	MIwb: 10.6			

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR08 River: 02-001 Scioto River RM: 126.40 Date: 10/13/2020

Time Fished: 2734 Distance: 0.500 Drainge (sq mi): 1630.0 Depth: 0

Location: Dst. Jackson Pike WWTP & Upst Kian Run Lat: 39.90169 Long: -83.00330

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		3	6.0	1.32	4200	4.60	700.0
20-003	GIZZARD SHAD	O		M		11	22.0	4.82	4200	4.60	190.9
40-003	BLACK BUFFALO	I		M	C	4	8.0	1.75	19800	21.67	2475.0
40-004	SMALLMOUTH BUFFALO	I		M	C	3	6.0	1.32	7400	8.10	1233.3
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.44	2000	2.19	1000.0
40-006						4	8.0	1.75	6800	7.44	850.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	2.0	0.44	1000	1.09	500.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	6	12.0	2.63	3160	3.46	263.3
40-023	SMALLMOUTH REDHORSE	I	M	S	R	3	6.0	1.32	3460	3.79	576.6
43-008	STREAMLINE CHUB	I	R	S	N	5	10.0	2.19	60	0.07	6.0
43-009	GRAVEL CHUB	I	M	S	N	4	8.0	1.75	60	0.07	7.5
43-015	SUCKERMOUTH MINNOW	I		S	N	6	12.0	2.63	60	0.07	5.0
43-020	EMERALD SHINER	I		M	N	29	58.0	12.72	100	0.11	1.7
43-027	RIVER SHINER	I		S	N	1	2.0	0.44	4	0.00	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	14	28.0	6.14	140	0.15	5.0
43-032	SPOTFIN SHINER	I		M	N	12	24.0	5.26	80	0.09	3.3
43-034	SAND SHINER	I	M	M	N	3	6.0	1.32	10	0.01	1.6
43-041	BULLHEAD MINNOW	O		C	N	8	16.0	3.51	40	0.04	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	24	48.0	10.53	140	0.15	2.9
43-044	CENTRAL STONEROLLER	H		N	N	6	12.0	2.63	100	0.11	8.3
43-047	GRASS CARP			M	E	1	2.0	0.44	20000	21.88	10000.0
70-001	BROOK SILVERSIDE	I	M	M		3	6.0	1.32	20	0.02	3.3
77-004	SMALLMOUTH BASS	C	M	C	F	6	12.0	2.63	60	0.07	5.0
77-005	SPOTTED BASS	C		C	F	10	20.0	4.39	680	0.74	34.0
77-008	GREEN SUNFISH	I	T	C	S	7	14.0	3.07	80	0.09	5.7
77-009	BLUEGILL SUNFISH	I	P	C	S	11	22.0	4.82	300	0.33	13.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	3	6.0	1.32	40	0.04	6.6
77-011	LONGEAR SUNFISH	I	M	C	S	23	46.0	10.09	620	0.68	13.4
77-015	GREEN SF X BLUEGILL SF					2	4.0	0.88	84	0.09	21.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.44	6	0.01	3.0
80-011	LOGPERCH	I	M	S	D	3	6.0	1.32	60	0.07	10.0
80-015	GREENSIDE DARTER	I	M	S	D	2	4.0	0.88	20	0.02	5.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.44	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	3	6.0	1.32	3200	3.50	533.3
85-001	FRESHWATER DRUM		P	M		4	8.0	1.75	13400	14.66	1675.0

No Species: 32 **Nat. Species:** 32 **Hybrids:** 2 **Total Counted:** 228 **Total Rel. Wt. :** 91388

IBI: 46.0 **MIwb:** 10.1

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR09 River: 02-001 Scioto River RM: 125.05 Date: 08/26/2020
 Time Fished: 3055 Distance: 0.500 Drainge (sq mi): 1640.0 Depth: 0
 Location: Dst. American Aggregates bridge Lat: 39.89043 Long: -83.01311

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.50	0	0.00	0.0
20-003	GIZZARD SHAD	O		M		18	36.0	9.05	2100	1.54	58.3
40-003	BLACK BUFFALO	I		M	C	3	6.0	1.51	11400	8.39	1900.0
40-004	SMALLMOUTH BUFFALO	I		M	C	10	20.0	5.03	28800	21.19	1440.0
40-006						21	42.0	10.55	31800	23.40	757.1
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	2.51	5460	4.02	546.0
43-001	COMMON CARP	O	T	M	G	1	2.0	0.50	8400	6.18	4200.0
43-032	SPOTFIN SHINER	I		M	N	5	10.0	2.51	60	0.04	6.0
43-034	SAND SHINER	I	M	M	N	1	2.0	0.50	6	0.00	3.0
43-041	BULLHEAD MINNOW	O		C	N	3	6.0	1.51	20	0.01	3.3
47-002	CHANNEL CATFISH			C	F	3	6.0	1.51	9800	7.21	1633.3
47-007	FLATHEAD CATFISH	P		C	F	3	6.0	1.51	28360	20.86	4726.6
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.50	300	0.22	150.0
77-005	SPOTTED BASS	C		C	F	7	14.0	3.52	500	0.37	35.7
77-008	GREEN SUNFISH	I	T	C	S	22	44.0	11.06	360	0.26	8.1
77-009	BLUEGILL SUNFISH	I	P	C	S	14	28.0	7.04	600	0.44	21.4
77-010	ORANGESPOTTED SUNFISH	I		C	S	4	8.0	2.01	100	0.07	12.5
77-011	LONGEAR SUNFISH	I	M	C	S	70	140.0	35.18	1400	1.03	10.0
77-013	PUMPKINSEED SUNFISH	I	P	C	S	1	2.0	0.50	160	0.12	80.0
80-001	SAUGER	P		S	F	1	2.0	0.50	1000	0.74	500.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.50	1000	0.74	500.0
85-001	FRESHWATER DRUM		P	M		4	8.0	2.01	4300	3.16	537.5

No Species: 20 **Nat. Species:** 20 **Hybrids:** 1 **Total Counted:** 199 **Total Rel. Wt. :** 135926

IBI: 38.0 **MIwb:** 9.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR09 River: 02-001 Scioto River RM: 125.05 Date: 10/13/2020

Time Fished: 2700 Distance: 0.500 Drainge (sq mi): 1640.0 Depth: 0

Location: Dst. American Aggregates bridge Lat: 39.89043 Long: -83.01311

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.57	120	0.10	60.0
20-003	GIZZARD SHAD	O		M		14	28.0	7.95	3660	3.11	130.7
40-003	BLACK BUFFALO	I		M	C	4	8.0	2.27	14200	12.07	1775.0
40-004	SMALLMOUTH BUFFALO	I		M	C	10	20.0	5.68	28400	24.13	1420.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.57	1600	1.36	800.0
40-006						9	18.0	5.11	14400	12.24	800.0
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	2.84	4800	4.08	480.0
43-001	COMMON CARP	O	T	M	G	3	6.0	1.70	22800	19.38	3800.0
43-020	EMERALD SHINER	I		M	N	20	40.0	11.36	80	0.07	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	4	8.0	2.27	40	0.03	5.0
43-032	SPOTFIN SHINER	I		M	N	16	32.0	9.09	100	0.08	3.1
43-034	SAND SHINER	I	M	M	N	1	2.0	0.57	4	0.00	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	4	8.0	2.27	20	0.02	2.5
47-002	CHANNEL CATFISH			C	F	1	2.0	0.57	800	0.68	400.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.57	17000	14.45	8500.0
70-001	BROOK SILVERSIDE	I	M	M		5	10.0	2.84	20	0.02	2.0
77-004	SMALLMOUTH BASS	C	M	C	F	2	4.0	1.14	1010	0.86	252.5
77-005	SPOTTED BASS	C		C	F	13	26.0	7.39	3400	2.89	130.7
77-008	GREEN SUNFISH	I	T	C	S	6	12.0	3.41	140	0.12	11.6
77-009	BLUEGILL SUNFISH	I	P	C	S	19	38.0	10.80	460	0.39	12.1
77-010	ORANGESPOTTED SUNFISH	I		C	S	2	4.0	1.14	20	0.02	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	31	62.0	17.61	640	0.54	10.3
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.57	60	0.05	30.0
80-001	SAUGER	P		S	F	1	2.0	0.57	500	0.42	250.0
85-001	FRESHWATER DRUM		P	M		2	4.0	1.14	3400	2.89	850.0

No Species: 23 **Nat. Species:** 23 **Hybrids:** 1 **Total Counted:** 176 **Total Rel. Wt. :** 117674

IBI: 42.0 **MIwb:** 9.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR10 River: 02-001 Scioto River RM: 124.20 Date: 08/26/2020
 Time Fished: 2608 Distance: 0.500 Drainge (sq mi): 1670.0 Depth: 0
 Location: Dst. I-270 South bridge Lat: 39.87975 Long: -83.01847

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		4	8.0	1.76	600	0.60	75.0
40-004	SMALLMOUTH BUFFALO	I		M	C	2	4.0	0.88	5800	5.84	1450.0
40-006						4	8.0	1.76	6400	6.45	800.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.44	4800	4.84	2400.0
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	2.20	5440	5.48	544.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	18	36.0	7.93	13640	13.74	378.8
40-023	SMALLMOUTH REDHORSE	I	M	S	R	14	28.0	6.17	18400	18.54	657.1
43-001	COMMON CARP	O	T	M	G	1	2.0	0.44	6800	6.85	3400.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.44	2	0.00	1.0
43-009	GRAVEL CHUB	I	M	S	N	5	10.0	2.20	44	0.04	4.4
43-015	SUCKERMOUTH MINNOW	I		S	N	2	4.0	0.88	8	0.01	2.0
43-020	EMERALD SHINER	I		M	N	4	8.0	1.76	16	0.02	2.0
43-022	ROSYFACE SHINER	I	I	S	N	6	12.0	2.64	28	0.03	2.3
43-027	RIVER SHINER	I		S	N	1	2.0	0.44	8	0.01	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	3	6.0	1.32	20	0.02	3.3
43-032	SPOTFIN SHINER	I		M	N	11	22.0	4.85	40	0.04	1.8
43-034	SAND SHINER	I	M	M	N	9	18.0	3.96	20	0.02	1.1
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.44	4	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	4	8.0	1.76	24	0.02	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	0.88	4	0.00	1.0
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.44	20	0.02	10.0
43-063	CHANNEL SHINER	I	I	M	N	41	82.0	18.06	140	0.14	1.7
47-002	CHANNEL CATFISH			C	F	8	16.0	3.52	20580	20.74	1286.2
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.88	5760	5.80	1440.0
74-001	WHITE BASS	P		M	F	3	6.0	1.32	960	0.97	160.0
77-003	ROCK BASS	C		C	S	2	4.0	0.88	480	0.48	120.0
77-004	SMALLMOUTH BASS	C	M	C	F	3	6.0	1.32	920	0.93	153.3
77-005	SPOTTED BASS	C		C	F	3	6.0	1.32	320	0.32	53.3
77-008	GREEN SUNFISH	I	T	C	S	13	26.0	5.73	360	0.36	13.8
77-009	BLUEGILL SUNFISH	I	P	C	S	23	46.0	10.13	600	0.60	13.0
77-011	LONGEAR SUNFISH	I	M	C	S	20	40.0	8.81	640	0.64	16.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.44	80	0.08	40.0
78-001	ORIENTAL WEATHERFISH	I		C	E	1	2.0	0.44	20	0.02	10.0
80-011	LOGPERCH	I	M	S	D	1	2.0	0.44	20	0.02	10.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.44	2	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.44	2	0.00	1.0
80-024	FANTAIL DARTER	I		C	D	1	2.0	0.44	2	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	3	6.0	1.32	3040	3.06	506.6
85-001	FRESHWATER DRUM		P	M		1	2.0	0.44	3200	3.22	1600.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

No Species: 36	Nat. Species: 35	Hybrids: 2	Total Counted: 227	Total Rel. Wt. : 99244
IBI: 48.0	MIwb: 10.4			

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR10 River: 02-001 Scioto River RM: 124.20 Date: 10/13/2020
 Time Fished: 2424 Distance: 0.500 Drainge (sq mi): 1670.0 Depth: 0
 Location: Dst. I-270 South bridge Lat: 39.87975 Long: -83.01847

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		6	12.0	2.33	1300	0.70	108.3
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.39	6400	3.46	3200.0
40-004	SMALLMOUTH BUFFALO	I		M	C	8	16.0	3.11	26000	14.05	1625.0
40-005	QUILLBACK CARPSUCKER	O		M	C	3	6.0	1.17	5000	2.70	833.3
40-006						9	18.0	3.50	14800	8.00	822.2
40-009	BLACK REDHORSE	I	I	S	R	2	4.0	0.78	1600	0.86	400.0
40-010	GOLDEN REDHORSE	I	M	S	R	13	26.0	5.06	17400	9.40	669.2
40-015	NORTHERN HOG SUCKER	I	M	S	R	17	34.0	6.61	6840	3.70	201.1
40-023	SMALLMOUTH REDHORSE	I	M	S	R	35	70.0	13.62	58600	31.66	837.1
43-001	COMMON CARP	O	T	M	G	3	6.0	1.17	24000	12.97	4000.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.39	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	3	6.0	1.17	20	0.01	3.3
43-009	GRAVEL CHUB	I	M	S	N	51	102.0	19.84	500	0.27	4.9
43-015	SUCKERMOUTH MINNOW	I		S	N	1	2.0	0.39	6	0.00	3.0
43-020	EMERALD SHINER	I		M	N	20	40.0	7.78	80	0.04	2.0
43-027	RIVER SHINER	I		S	N	2	4.0	0.78	8	0.00	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	2	4.0	0.78	20	0.01	5.0
43-032	SPOTFIN SHINER	I		M	N	4	8.0	1.56	14	0.01	1.7
43-034	SAND SHINER	I	M	M	N	2	4.0	0.78	4	0.00	1.0
43-035	MIMIC SHINER	I	I	M	N	2	4.0	0.78	6	0.00	1.5
43-041	BULLHEAD MINNOW	O		C	N	5	10.0	1.95	20	0.01	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	0.78	4	0.00	1.0
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.39	10	0.01	5.0
43-063	CHANNEL SHINER	I	I	M	N	17	34.0	6.61	60	0.03	1.7
47-002	CHANNEL CATFISH			C	F	4	8.0	1.56	7740	4.18	967.5
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.39	4	0.00	2.0
74-001	WHITE BASS	P		M	F	1	2.0	0.39	80	0.04	40.0
74-005	Striped X White Bass				E	2	4.0	0.78	940	0.51	235.0
77-004	SMALLMOUTH BASS	C	M	C	F	6	12.0	2.33	2680	1.45	223.3
77-005	SPOTTED BASS	C		C	F	7	14.0	2.72	1180	0.64	84.2
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.39	800	0.43	400.0
77-009	BLUEGILL SUNFISH	I	P	C	S	6	12.0	2.33	260	0.14	21.6
77-010	ORANGESPOTTED SUNFISH	I		C	S	2	4.0	0.78	20	0.01	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	5	10.0	1.95	160	0.09	16.0
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.39	100	0.05	50.0
80-011	LOGPERCH	I	M	S	D	3	6.0	1.17	100	0.05	16.6
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.39	6	0.00	3.0
80-020	TIPPECANOE DARTER	I	R	S	D	1	2.0	0.39	2	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.39	2	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.39	900	0.49	450.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR10 River: 02-001 Scioto River RM: 124.20 Date: 10/13/2020
 Time Fished: 2424 Distance: 0.500 Drainge (sq mi): 1670.0 Depth: 0
 Location: Dst. I-270 South bridge Lat: 39.87975 Long: -83.01847

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
85-001	FRESHWATER DRUM		P	M		4	8.0	1.56	7400	4.00	925.0

No Species: 38 **Nat. Species:** 37 **Hybrids:** 2 **Total Counted:** 257 **Total Rel. Wt. :** 185070

IBI: 54.0 **MIwb:** 10.7

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR11 River: 02-001 Scioto River RM: 119.90 Date: 09/01/2020
 Time Fished: 2504 Distance: 0.500 Drainge (sq mi): 1700.0 Depth: 0
 Location: at 665 Lat: 39.83347 Long: -83.00882

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.44	1000	0.61	500.0
20-003	GIZZARD SHAD	O		M		7	14.0	3.06	1840	1.13	131.4
40-003	BLACK BUFFALO	I		M	C	2	4.0	0.87	9600	5.87	2400.0
40-004	SMALLMOUTH BUFFALO	I		M	C	14	28.0	6.11	46000	28.14	1642.8
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.44	1600	0.98	800.0
40-006						4	8.0	1.75	5800	3.55	725.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.44	1600	0.98	800.0
40-010	GOLDEN REDHORSE	I	M	S	R	8	16.0	3.49	8800	5.38	550.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	4	8.0	1.75	2410	1.47	301.2
40-023	SMALLMOUTH REDHORSE	I	M	S	R	31	62.0	13.54	44340	27.13	715.1
43-001	COMMON CARP	O	T	M	G	1	2.0	0.44	3000	1.84	1500.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.44	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	1	2.0	0.44	20	0.01	10.0
43-020	EMERALD SHINER	I		M	N	39	78.0	17.03	100	0.06	1.2
43-022	ROSYFACE SHINER	I	I	S	N	4	8.0	1.75	10	0.01	1.2
43-031	STEELCOLOR SHINER	I	P	M	N	4	8.0	1.75	40	0.02	5.0
43-032	SPOTFIN SHINER	I		M	N	28	56.0	12.23	160	0.10	2.8
43-034	SAND SHINER	I	M	M	N	1	2.0	0.44	4	0.00	2.0
43-044	CENTRAL STONEROLLER	H		N	N	1	2.0	0.44	30	0.02	15.0
43-063	CHANNEL SHINER	I	I	M	N	18	36.0	7.86	82	0.05	2.2
47-002	CHANNEL CATFISH			C	F	8	16.0	3.49	9800	6.00	612.5
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.44	2200	1.35	1100.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.44	2	0.00	1.0
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	3.49	2340	1.43	146.2
77-005	SPOTTED BASS	C		C	F	4	8.0	1.75	1200	0.73	150.0
77-008	GREEN SUNFISH	I	T	C	S	7	14.0	3.06	160	0.10	11.4
77-009	BLUEGILL SUNFISH	I	P	C	S	13	26.0	5.68	800	0.49	30.7
77-011	LONGEAR SUNFISH	I	M	C	S	4	8.0	1.75	160	0.10	20.0
77-015	GREEN SF X BLUEGILL SF					2	4.0	0.87	240	0.15	60.0
80-026	SAUGER X WALLEYE	P			E	4	8.0	1.75	6500	3.98	812.5
85-001	FRESHWATER DRUM		P	M		6	12.0	2.62	13600	8.32	1133.3

No Species: 28 **Nat. Species:** 28 **Hybrids:** 2 **Total Counted:** 229 **Total Rel. Wt. :** 163442
IBI: 52.0 **MIwb:** 10.2

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR11 River: 02-001 Scioto River RM: 119.90 Date: 10/09/2020

Time Fished: 2626 Distance: 0.500 Drainge (sq mi): 1700.0 Depth: 0

Location: at 665 Lat: 39.83347 Long: -83.00882

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		4	8.0	1.20	20	0.01	2.5
40-003	BLACK BUFFALO	I		M	C	3	6.0	0.90	12800	7.77	2133.3
40-004	SMALLMOUTH BUFFALO	I		M	C	18	36.0	5.42	54000	32.80	1500.0
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.60	3000	1.82	750.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.30	5400	3.28	2700.0
40-010	GOLDEN REDHORSE	I	M	S	R	3	6.0	0.90	3400	2.07	566.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	10	20.0	3.01	6120	3.72	306.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.30	40	0.02	20.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	19	38.0	5.72	30000	18.22	789.4
43-001	COMMON CARP	O	T	M	G	5	10.0	1.51	18600	11.30	1860.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.30	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	3	6.0	0.90	40	0.02	6.6
43-009	GRAVEL CHUB	I	M	S	N	13	26.0	3.92	100	0.06	3.8
43-015	SUCKERMOUTH MINNOW	I		S	N	3	6.0	0.90	12	0.01	2.0
43-020	EMERALD SHINER	I		M	N	72	144.0	21.69	210	0.13	1.4
43-021	SILVER SHINER	I	I	S	N	2	4.0	0.60	16	0.01	4.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.30	6	0.00	3.0
43-031	STEELCOLOR SHINER	I	P	M	N	12	24.0	3.61	130	0.08	5.4
43-032	SPOTFIN SHINER	I		M	N	7	14.0	2.11	60	0.04	4.2
43-034	SAND SHINER	I	M	M	N	1	2.0	0.30	4	0.00	2.0
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.30	4	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	3	6.0	0.90	8	0.00	1.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	4	8.0	1.20	20	0.01	2.5
43-044	CENTRAL STONEROLLER	H		N	N	30	60.0	9.04	320	0.19	5.3
43-063	CHANNEL SHINER	I	I	M	N	33	66.0	9.94	130	0.08	1.9
47-002	CHANNEL CATFISH			C	F	4	8.0	1.20	2740	1.66	342.5
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.30	1400	0.85	700.0
70-001	BROOK SILVERSIDE	I	M	M		2	4.0	0.60	6	0.00	1.5
74-001	WHITE BASS	P		M	F	1	2.0	0.30	100	0.06	50.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	0.60	800	0.49	200.0
77-004	SMALLMOUTH BASS	C	M	C	F	16	32.0	4.82	3200	1.94	100.0
77-005	SPOTTED BASS	C		C	F	5	10.0	1.51	1680	1.02	168.0
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	0.90	40	0.02	6.6
77-009	BLUEGILL SUNFISH	I	P	C	S	9	18.0	2.71	340	0.21	18.8
77-011	LONGEAR SUNFISH	I	M	C	S	11	22.0	3.31	320	0.19	14.5
80-001	SAUGER	P		S	F	1	2.0	0.30	1000	0.61	500.0
80-011	LOGPERCH	I	M	S	D	7	14.0	2.11	280	0.17	20.0
80-015	GREENSIDE DARTER	I	M	S	D	7	14.0	2.11	80	0.05	5.7
80-022	RAINBOW DARTER	I	M	S	D	4	8.0	1.20	10	0.01	1.2
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.30	1000	0.61	500.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR11 River: 02-001 Scioto River RM: 119.90 Date: 10/09/2020

Time Fished: 2626 Distance: 0.500 Drainge (sq mi): 1700.0 Depth: 0

Location: at 665 Lat: 39.83347 Long: -83.00882

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
85-001	FRESHWATER DRUM		P	M		6	12.0	1.81	17200	10.45	1433.3

No Species: 39 **Nat. Species:** 39 **Hybrids:** 1 **Total Counted:** 332 **Total Rel. Wt. :** 164640

IBI: 52.0 **MIwb:** 10.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SRCSMZ River: 02-001 Scioto River RM: 118.20 Date: 09/01/2020

Time Fished: 695 Distance: 0.100 Drainge (sq mi): 1710.0 Depth: 0

Location: Southerly Mixing Zone Lat: 39.81142 Long: -83.01640

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		2	20.0	4.00	4000	3.05	200.0
40-004	SMALLMOUTH BUFFALO	I		M	C	2	20.0	4.00	32000	24.42	1600.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	10.0	2.00	10000	7.63	1000.0
40-006						2	20.0	4.00	14000	10.68	700.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	10.0	2.00	7000	5.34	700.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	3	30.0	6.00	25000	19.08	833.3
43-020	EMERALD SHINER	I		M	N	8	80.0	16.00	150	0.11	1.8
43-022	ROSYFACE SHINER	I	I	S	N	1	10.0	2.00	20	0.02	2.0
43-025	STRIPED SHINER	I		S	N	1	10.0	2.00	20	0.02	2.0
43-032	SPOTFIN SHINER	I		M	N	3	30.0	6.00	90	0.07	3.0
43-034	SAND SHINER	I	M	M	N	2	20.0	4.00	30	0.02	1.5
43-041	BULLHEAD MINNOW	O		C	N	1	10.0	2.00	40	0.03	4.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	6	60.0	12.00	150	0.11	2.5
43-044	CENTRAL STONEROLLER	H		N	N	1	10.0	2.00	30	0.02	3.0
47-002	CHANNEL CATFISH			C	F	1	10.0	2.00	16000	12.21	1600.0
77-005	SPOTTED BASS	C		C	F	1	10.0	2.00	40	0.03	4.0
77-008	GREEN SUNFISH	I	T	C	S	5	50.0	10.00	500	0.38	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	4	40.0	8.00	1800	1.37	45.0
77-011	LONGEAR SUNFISH	I	M	C	S	1	10.0	2.00	100	0.08	10.0
80-004	DUSKY DARTER	I	M	S	D	1	10.0	2.00	50	0.04	5.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	10.0	2.00	30	0.02	3.0
80-026	SAUGER X WALLEYE	P			E	2	20.0	4.00	20000	15.26	1000.0

No Species: 20 **Nat. Species:** 21 **Hybrids:** 1 **Total Counted:** 50 **Total Rel. Wt. :** 131050

IBI: 36.0 **MIwb:** 9.6

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SRCSMZ River: 02-001 Scioto River RM: 118.20 Date: 10/09/2020

Time Fished: 585 Distance: 0.100 Drainge (sq mi): 1710.0 Depth: 0

Location: Southerly Mixing Zone Lat: 39.81142 Long: -83.01640

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-004	SMALLMOUTH BUFFALO	I		M	C	2	20.0	1.65	38000	27.18	1900.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	10.0	0.83	8000	5.72	800.0
40-006						7	70.0	5.79	63000	45.05	900.0
40-010	GOLDEN REDHORSE	I	M	S	R	7	70.0	5.79	13000	9.30	185.7
43-007	BIGEYE CHUB	I	I	S	N	18	180.0	14.88	220	0.16	1.2
43-020	EMERALD SHINER	I		M	N	25	250.0	20.66	350	0.25	1.4
43-032	SPOTFIN SHINER	I		M	N	4	40.0	3.31	100	0.07	2.5
43-035	MIMIC SHINER	I	I	M	N	35	350.0	28.93	550	0.39	1.5
43-041	BULLHEAD MINNOW	O		C	N	1	10.0	0.83	30	0.02	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	4	40.0	3.31	100	0.07	2.5
77-004	SMALLMOUTH BASS	C	M	C	F	1	10.0	0.83	80	0.06	8.0
77-005	SPOTTED BASS	C		C	F	5	50.0	4.13	4000	2.86	80.0
77-008	GREEN SUNFISH	I	T	C	S	7	70.0	5.79	800	0.57	11.4
77-011	LONGEAR SUNFISH	I	M	C	S	1	10.0	0.83	300	0.21	30.0
77-015	GREEN SF X BLUEGILL SF					1	10.0	0.83	300	0.21	30.0
80-026	SAUGER X WALLEYE	P			E	1	10.0	0.83	3000	2.15	300.0
85-001	FRESHWATER DRUM		P	M		1	10.0	0.83	8000	5.72	800.0

No Species: 15 **Nat. Species:** 15 **Hybrids:** 2 **Total Counted:** 121 **Total Rel. Wt. :** 139830

IBI: 44.0 **MIwb:** 9.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR12 River: 02-001 Scioto River RM: 117.80 Date: 09/01/2020
 Time Fished: 2408 Distance: 0.500 Drainge (sq mi): 1710.0 Depth: 0
 Location: Dst. Southerly WWTP Lat: 39.80925 Long: -83.01597

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		6	12.0	2.96	1900	0.90	158.3
40-003	BLACK BUFFALO	I		M	C	4	8.0	1.97	12800	6.07	1600.0
40-004	SMALLMOUTH BUFFALO	I		M	C	9	18.0	4.43	30800	14.61	1711.1
40-005	QUILLBACK CARPSUCKER	O		M	C	7	14.0	3.45	10800	5.12	771.4
40-006						17	34.0	8.37	27000	12.81	794.1
40-009	BLACK REDHORSE	I	I	S	R	1	2.0	0.49	400	0.19	200.0
40-010	GOLDEN REDHORSE	I	M	S	R	10	20.0	4.93	10920	5.18	546.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	11	22.0	5.42	3300	1.57	150.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	23	46.0	11.33	24800	11.76	539.1
43-001	COMMON CARP	O	T	M	G	2	4.0	0.99	12000	5.69	3000.0
43-008	STREAMLINE CHUB	I	R	S	N	5	10.0	2.46	100	0.05	10.0
43-009	GRAVEL CHUB	I	M	S	N	8	16.0	3.94	30	0.01	1.8
43-020	EMERALD SHINER	I		M	N	11	22.0	5.42	30	0.01	1.3
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.49	2	0.00	1.0
43-032	SPOTFIN SHINER	I		M	N	6	12.0	2.96	40	0.02	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.49	4	0.00	2.0
43-063	CHANNEL SHINER	I	I	M	N	10	20.0	4.93	32	0.02	1.6
47-002	CHANNEL CATFISH			C	F	10	20.0	4.93	42600	20.21	2130.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.99	1820	0.86	455.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.49	16	0.01	8.0
74-005	Striped X White Bass				E	1	2.0	0.49	300	0.14	150.0
77-004	SMALLMOUTH BASS	C	M	C	F	4	8.0	1.97	590	0.28	73.7
77-005	SPOTTED BASS	C		C	F	6	12.0	2.96	3930	1.86	327.5
77-008	GREEN SUNFISH	I	T	C	S	5	10.0	2.46	140	0.07	14.0
77-009	BLUEGILL SUNFISH	I	P	C	S	14	28.0	6.90	720	0.34	25.7
77-011	LONGEAR SUNFISH	I	M	C	S	10	20.0	4.93	360	0.17	18.0
77-015	GREEN SF X BLUEGILL SF					2	4.0	0.99	80	0.04	20.0
80-001	SAUGER	P		S	F	2	4.0	0.99	1200	0.57	300.0
80-011	LOGPERCH	I	M	S	D	2	4.0	0.99	100	0.05	25.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.49	6	0.00	3.0
80-026	SAUGER X WALLEYE	P			E	4	8.0	1.97	4400	2.09	550.0
85-001	FRESHWATER DRUM		P	M		7	14.0	3.45	19600	9.30	1400.0

No Species: 28 **Nat. Species:** 28 **Hybrids:** 3 **Total Counted:** 203 **Total Rel. Wt. :** 210820
IBI: 50.0 **MIwb:** 10.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR12 River: 02-001 Scioto River RM: 117.80 Date: 10/09/2020
 Time Fished: 2140 Distance: 0.500 Drainge (sq mi): 1710.0 Depth: 0
 Location: Dst. Southerly WWTP Lat: 39.80925 Long: -83.01597

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		22	44.0	6.61	5020	1.76	114.0
40-003	BLACK BUFFALO	I		M	C	4	8.0	1.20	16000	5.62	2000.0
40-004	SMALLMOUTH BUFFALO	I		M	C	5	10.0	1.50	16600	5.83	1660.0
40-005	QUILLBACK CARPSUCKER	O		M	C	6	12.0	1.80	11000	3.86	916.6
40-006						32	64.0	9.61	56000	19.67	875.0
40-008	SILVER REDHORSE	I	M	S	R	3	6.0	0.90	13800	4.85	2300.0
40-010	GOLDEN REDHORSE	I	M	S	R	31	62.0	9.31	37200	13.07	600.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	15	30.0	4.50	10920	3.84	364.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.30	40	0.01	20.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	36	72.0	10.81	44400	15.60	616.6
43-007	BIGEYE CHUB	I	I	S	N	2	4.0	0.60	6	0.00	1.5
43-008	STREAMLINE CHUB	I	R	S	N	11	22.0	3.30	120	0.04	5.4
43-020	EMERALD SHINER	I		M	N	67	134.0	20.12	220	0.08	1.6
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.30	6	0.00	3.0
43-031	STEELCOLOR SHINER	I	P	M	N	1	2.0	0.30	4	0.00	2.0
43-032	SPOTFIN SHINER	I		M	N	2	4.0	0.60	10	0.00	2.5
43-041	BULLHEAD MINNOW	O		C	N	9	18.0	2.70	100	0.04	5.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	12	24.0	3.60	60	0.02	2.5
43-044	CENTRAL STONEROLLER	H		N	N	2	4.0	0.60	20	0.01	5.0
43-063	CHANNEL SHINER	I	I	M	N	8	16.0	2.40	30	0.01	1.8
47-002	CHANNEL CATFISH			C	F	6	12.0	1.80	19000	6.67	1583.3
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.60	5200	1.83	1300.0
70-001	BROOK SILVERSIDE	I	M	M		2	4.0	0.60	6	0.00	1.5
74-001	WHITE BASS	P		M	F	1	2.0	0.30	340	0.12	170.0
77-004	SMALLMOUTH BASS	C	M	C	F	6	12.0	1.80	2840	1.00	236.6
77-005	SPOTTED BASS	C		C	F	11	22.0	3.30	3300	1.16	150.0
77-011	LONGEAR SUNFISH	I	M	C	S	5	10.0	1.50	200	0.07	20.0
80-001	SAUGER	P		S	F	3	6.0	0.90	2680	0.94	446.6
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.30	4	0.00	2.0
80-011	LOGPERCH	I	M	S	D	11	22.0	3.30	320	0.11	14.5
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.30	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	3	6.0	0.90	2400	0.84	400.0
85-001	FRESHWATER DRUM		P	M		11	22.0	3.30	36800	12.93	1672.7

No Species: 31 **Nat. Species:** 32 **Hybrids:** 1 **Total Counted:** 333 **Total Rel. Wt. :** 284650
IBI: 48.0 **MIwb:** 11.1

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR13 River: 02-001 Scioto River RM: 117.00 Date: 09/01/2020
 Time Fished: 2544 Distance: 0.500 Drainge (sq mi): 2260.0 Depth: 0
 Location: Dst. Big Walnut Creek Lat: 39.79929 Long: -83.01046

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		2	4.0	1.40	2400	2.02	600.0
20-003	GIZZARD SHAD	O		M		5	10.0	3.50	1400	1.18	140.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.70	2800	2.36	1400.0
40-004	SMALLMOUTH BUFFALO	I		M	C	9	18.0	6.29	28400	23.96	1577.7
40-006						11	22.0	7.69	16600	14.00	754.5
40-010	GOLDEN REDHORSE	I	M	S	R	22	44.0	15.38	20700	17.46	470.4
40-023	SMALLMOUTH REDHORSE	I	M	S	R	9	18.0	6.29	8500	7.17	472.2
43-001	COMMON CARP	O	T	M	G	1	2.0	0.70	2600	2.19	1300.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.70	4	0.00	2.0
43-009	GRAVEL CHUB	I	M	S	N	1	2.0	0.70	4	0.00	2.0
43-020	EMERALD SHINER	I		M	N	3	6.0	2.10	12	0.01	2.0
43-032	SPOTFIN SHINER	I		M	N	5	10.0	3.50	20	0.02	2.0
43-034	SAND SHINER	I	M	M	N	2	4.0	1.40	6	0.01	1.5
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.70	4	0.00	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.70	2	0.00	1.0
47-002	CHANNEL CATFISH			C	F	6	12.0	4.20	22000	18.56	1833.3
74-005	Striped X White Bass				E	2	4.0	1.40	760	0.64	190.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	1.40	320	0.27	80.0
77-004	SMALLMOUTH BASS	C	M	C	F	4	8.0	2.80	4440	3.75	555.0
77-005	SPOTTED BASS	C		C	F	5	10.0	3.50	800	0.67	80.0
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	1.40	900	0.76	225.0
77-008	GREEN SUNFISH	I	T	C	S	7	14.0	4.90	200	0.17	14.2
77-009	BLUEGILL SUNFISH	I	P	C	S	20	40.0	13.99	540	0.46	13.5
77-011	LONGEAR SUNFISH	I	M	C	S	12	24.0	8.39	260	0.22	10.8
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.70	40	0.03	20.0
80-001	SAUGER	P		S	F	1	2.0	0.70	1000	0.84	500.0
80-011	LOGPERCH	I	M	S	D	2	4.0	1.40	60	0.05	15.0
80-026	SAUGER X WALLEYE	P			E	5	10.0	3.50	3760	3.17	376.0

No Species: 25 **Nat. Species:** 24 **Hybrids:** 2 **Total Counted:** 143 **Total Rel. Wt. :** 118532
IBI: 50.0 **MIwb:** 9.7

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR13 River: 02-001 Scioto River RM: 117.00 Date: 10/09/2020
 Time Fished: 2858 Distance: 0.500 Drainge (sq mi): 2260.0 Depth: 0
 Location: Dst. Big Walnut Creek Lat: 39.79929 Long: -83.01046

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		9	18.0	5.03	2080	1.04	115.5
37-004	MUSKELLUNGE	P		M	F	2	4.0	1.12	22000	10.99	5500.0
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	1.12	3400	1.70	850.0
40-006						6	12.0	3.35	10600	5.30	883.3
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	1.12	3200	1.60	800.0
40-010	GOLDEN REDHORSE	I	M	S	R	36	72.0	20.11	27700	13.84	384.7
40-015	NORTHERN HOG SUCKER	I	M	S	R	1	2.0	0.56	600	0.30	300.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	25	50.0	13.97	30600	15.29	612.0
43-001	COMMON CARP	O	T	M	G	5	10.0	2.79	37800	18.89	3780.0
43-020	EMERALD SHINER	I		M	N	12	24.0	6.70	50	0.02	2.0
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.56	8	0.00	4.0
43-032	SPOTFIN SHINER	I		M	N	5	10.0	2.79	40	0.02	4.0
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	1.12	12	0.01	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.56	8	0.00	4.0
43-063	CHANNEL SHINER	I	I	M	N	1	2.0	0.56	4	0.00	2.0
47-002	CHANNEL CATFISH			C	F	12	24.0	6.70	33600	16.79	1400.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	1.12	9400	4.70	2350.0
74-001	WHITE BASS	P		M	F	1	2.0	0.56	140	0.07	70.0
77-002	BLACK CRAPPIE	I		C	S	6	12.0	3.35	3000	1.50	250.0
77-004	SMALLMOUTH BASS	C	M	C	F	13	26.0	7.26	7420	3.71	285.3
77-005	SPOTTED BASS	C		C	F	8	16.0	4.47	760	0.38	47.5
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.56	220	0.11	110.0
77-009	BLUEGILL SUNFISH	I	P	C	S	8	16.0	4.47	760	0.38	47.5
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	1.12	40	0.02	10.0
80-001	SAUGER	P		S	F	1	2.0	0.56	540	0.27	270.0
80-004	DUSKY DARTER	I	M	S	D	2	4.0	1.12	6	0.00	1.5
80-011	LOGPERCH	I	M	S	D	4	8.0	2.23	120	0.06	15.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.56	10	0.01	5.0
80-026	SAUGER X WALLEYE	P			E	7	14.0	3.91	5000	2.50	357.1
85-001	FRESHWATER DRUM		P	M		1	2.0	0.56	1000	0.50	500.0

No Species: 28 **Nat. Species:** 28 **Hybrids:** 1 **Total Counted:** 179 **Total Rel. Wt. :** 200118
IBI: 52.0 **MIwb:** 10.2

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR14 River: 02-001 Scioto River RM: 115.75 Date: 09/01/2020
 Time Fished: 2484 Distance: 0.500 Drainge (sq mi): 2270.0 Depth: 0
 Location: Dst. Former Pickway Power Plant Lat: 39.17841 Long: -83.01012

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.35	120	0.05	60.0
20-003	GIZZARD SHAD	O		M		16	32.0	5.54	2400	1.08	75.0
40-003	BLACK BUFFALO	I		M	C	10	20.0	3.46	49600	22.27	2480.0
40-004	SMALLMOUTH BUFFALO	I		M	C	5	10.0	1.73	16600	7.45	1660.0
40-005	QUILLBACK CARPSUCKER	O		M	C	7	14.0	2.42	7320	3.29	522.8
40-006						1	2.0	0.35	1000	0.45	500.0
40-008	SILVER REDHORSE	I	M	S	R	3	6.0	1.04	14100	6.33	2350.0
40-010	GOLDEN REDHORSE	I	M	S	R	16	32.0	5.54	14530	6.52	454.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.35	6000	2.69	3000.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	19	38.0	6.57	9760	4.38	256.8
40-023	SMALLMOUTH REDHORSE	I	M	S	R	27	54.0	9.34	33100	14.86	612.9
43-001	COMMON CARP	O	T	M	G	1	2.0	0.35	400	0.18	200.0
43-007	BIGEYE CHUB	I	I	S	N	3	6.0	1.04	10	0.00	1.6
43-009	GRAVEL CHUB	I	M	S	N	26	52.0	9.00	362	0.16	6.9
43-015	SUCKERMOUTH MINNOW	I		S	N	2	4.0	0.69	18	0.01	4.5
43-020	EMERALD SHINER	I		M	N	33	66.0	11.42	80	0.04	1.2
43-025	STRIPED SHINER	I		S	N	4	8.0	1.38	10	0.00	1.2
43-031	STEELCOLOR SHINER	I	P	M	N	5	10.0	1.73	50	0.02	5.0
43-032	SPOTFIN SHINER	I		M	N	12	24.0	4.15	80	0.04	3.3
43-034	SAND SHINER	I	M	M	N	2	4.0	0.69	6	0.00	1.5
43-041	BULLHEAD MINNOW	O		C	N	4	8.0	1.38	20	0.01	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.35	4	0.00	2.0
43-044	CENTRAL STONEROLLER	H		N	N	12	24.0	4.15	160	0.07	6.6
43-063	CHANNEL SHINER	I	I	M	N	26	52.0	9.00	90	0.04	1.7
47-002	CHANNEL CATFISH			C	F	10	20.0	3.46	21160	9.50	1058.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.69	11600	5.21	2900.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.35	60	0.03	30.0
70-001	BROOK SILVERSIDE	I	M	M		2	4.0	0.69	2	0.00	0.5
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.35	100	0.04	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	9	18.0	3.11	1100	0.49	61.1
77-005	SPOTTED BASS	C		C	F	2	4.0	0.69	650	0.29	162.5
77-009	BLUEGILL SUNFISH	I	P	C	S	3	6.0	1.04	200	0.09	33.3
80-005	BLACKSIDE DARTER	I		S	D	1	2.0	0.35	2	0.00	1.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.35	10	0.00	5.0
80-017	VARIEGATE DARTER	I	I	S	D	1	2.0	0.35	8	0.00	4.0
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.35	8	0.00	4.0
80-020	TIPPECANOE DARTER	I	R	S	D	3	6.0	1.04	6	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	4	8.0	1.38	4600	2.07	575.0
85-001	FRESHWATER DRUM		P	M		11	22.0	3.81	27400	12.30	1245.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

No Species: 37	Nat. Species: 37	Hybrids: 1	Total Counted: 289	Total Rel. Wt. : 222726
IBI: 54.0	MIwb: 11.1			

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR14 River: 02-001 Scioto River RM: 115.75 Date: 10/09/2020

Time Fished: 2557 Distance: 0.500 Drainge (sq mi): 2270.0 Depth: 0

Location: Dst. Former Pickway Power Plant Lat: 39.17841 Long: -83.01012

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		45	90.0	10.39	10780	4.07	119.7
40-003	BLACK BUFFALO	I		M	C	7	14.0	1.62	32000	12.09	2285.7
40-004	SMALLMOUTH BUFFALO	I		M	C	10	20.0	2.31	34400	12.99	1720.0
40-005	QUILLBACK CARPSUCKER	O		M	C	4	8.0	0.92	5800	2.19	725.0
40-006						9	18.0	2.08	15000	5.67	833.3
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.23	4000	1.51	2000.0
40-010	GOLDEN REDHORSE	I	M	S	R	24	48.0	5.54	31000	11.71	645.8
40-015	NORTHERN HOG SUCKER	I	M	S	R	28	56.0	6.47	12420	4.69	221.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	40	80.0	9.24	53200	20.09	665.0
43-007	BIGEYE CHUB	I	I	S	N	3	6.0	0.69	6	0.00	1.0
43-008	STREAMLINE CHUB	I	R	S	N	11	22.0	2.54	260	0.10	11.8
43-009	GRAVEL CHUB	I	M	S	N	18	36.0	4.16	220	0.08	6.1
43-015	SUCKERMOUTH MINNOW	I		S	N	2	4.0	0.46	40	0.02	10.0
43-020	EMERALD SHINER	I		M	N	56	112.0	12.93	180	0.07	1.6
43-022	ROSYFACE SHINER	I	I	S	N	4	8.0	0.92	8	0.00	1.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.23	8	0.00	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	8	16.0	1.85	90	0.03	5.6
43-032	SPOTFIN SHINER	I		M	N	4	8.0	0.92	10	0.00	1.2
43-034	SAND SHINER	I	M	M	N	9	18.0	2.08	20	0.01	1.1
43-041	BULLHEAD MINNOW	O		C	N	8	16.0	1.85	40	0.02	2.5
43-044	CENTRAL STONEROLLER	H		N	N	33	66.0	7.62	840	0.32	12.7
43-063	CHANNEL SHINER	I	I	M	N	42	84.0	9.70	170	0.06	2.0
47-002	CHANNEL CATFISH			C	F	6	12.0	1.39	16600	6.27	1383.3
77-004	SMALLMOUTH BASS	C	M	C	F	14	28.0	3.23	11220	4.24	400.7
77-005	SPOTTED BASS	C		C	F	4	8.0	0.92	200	0.08	25.0
77-008	GREEN SUNFISH	I	T	C	S	1	2.0	0.23	20	0.01	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	1	2.0	0.23	40	0.02	20.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.46	40	0.02	10.0
80-001	SAUGER	P		S	F	1	2.0	0.23	1000	0.38	500.0
80-005	BLACKSIDE DARTER	I		S	D	2	4.0	0.46	4	0.00	1.0
80-011	LOGPERCH	I	M	S	D	10	20.0	2.31	460	0.17	23.0
80-015	GREENSIDE DARTER	I	M	S	D	3	6.0	0.69	40	0.02	6.6
80-016	BANDED DARTER	I	I	S	D	4	8.0	0.92	10	0.00	1.2
80-017	VARIEGATE DARTER	I	I	S	D	2	4.0	0.46	30	0.01	7.5
80-022	RAINBOW DARTER	I	M	S	D	2	4.0	0.46	6	0.00	1.5
80-026	SAUGER X WALLEYE	P			E	11	22.0	2.54	22600	8.54	1027.2
85-001	FRESHWATER DRUM		P	M		3	6.0	0.69	12000	4.53	2000.0

No Species: 35 **Nat. Species:** 36 **Hybrids:** 1 **Total Counted:** 433 **Total Rel. Wt. :** 264762
IBI: 54.0 **MIwb:** 11.1

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR15 River: 02-001 Scioto River RM: 113.85 Date: 09/16/2020

Time Fished: 2729 Distance: 0.500 Drainge (sq mi): 2280.0 Depth: 0

Location: Dst. St. Rt. 762 Lat: 39.75947 Long: -82.99915

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		12	24.0	4.65	1040	0.77	43.3
40-003	BLACK BUFFALO	I		M	C	3	6.0	1.16	15000	11.04	2500.0
40-004	SMALLMOUTH BUFFALO	I		M	C	3	6.0	1.16	9800	7.21	1633.3
40-006						5	10.0	1.94	8800	6.48	880.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.39	6400	4.71	3200.0
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	1.94	7220	5.31	722.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.39	6400	4.71	3200.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	20	40.0	7.75	8460	6.23	211.5
40-023	SMALLMOUTH REDHORSE	I	M	S	R	17	34.0	6.59	23900	17.59	702.9
43-001	COMMON CARP	O	T	M	G	2	4.0	0.78	17800	13.10	4450.0
43-007	BIGEYE CHUB	I	I	S	N	4	8.0	1.55	16	0.01	2.0
43-008	STREAMLINE CHUB	I	R	S	N	8	16.0	3.10	200	0.15	12.5
43-009	GRAVEL CHUB	I	M	S	N	25	50.0	9.69	200	0.15	4.0
43-015	SUCKERMOUTH MINNOW	I		S	N	9	18.0	3.49	100	0.07	5.5
43-020	EMERALD SHINER	I		M	N	54	108.0	20.93	180	0.13	1.6
43-025	STRIPED SHINER	I		S	N	1	2.0	0.39	2	0.00	1.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.39	6	0.00	3.0
43-031	STEELCOLOR SHINER	I	P	M	N	4	8.0	1.55	40	0.03	5.0
43-032	SPOTFIN SHINER	I		M	N	11	22.0	4.26	60	0.04	2.7
43-034	SAND SHINER	I	M	M	N	15	30.0	5.81	40	0.03	1.3
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	0.78	12	0.01	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	4	8.0	1.55	8	0.01	1.0
43-044	CENTRAL STONEROLLER	H		N	N	5	10.0	1.94	40	0.03	4.0
43-063	CHANNEL SHINER	I	I	M	N	2	4.0	0.78	8	0.01	2.0
47-002	CHANNEL CATFISH			C	F	6	12.0	2.33	16000	11.78	1333.3
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	3.10	1520	1.12	95.0
77-005	SPOTTED BASS	C		C	F	4	8.0	1.55	40	0.03	5.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.39	640	0.47	320.0
77-009	BLUEGILL SUNFISH	I	P	C	S	6	12.0	2.33	360	0.26	30.0
77-010	ORANGESPOTTED SUNFISH	I		C	S	2	4.0	0.78	60	0.04	15.0
77-011	LONGEAR SUNFISH	I	M	C	S	6	12.0	2.33	160	0.12	13.3
80-001	SAUGER	P		S	F	1	2.0	0.39	1700	1.25	850.0
80-015	GREENSIDE DARTER	I	M	S	D	2	4.0	0.78	20	0.01	5.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.39	2	0.00	1.0
80-017	VARIEGATE DARTER	I	I	S	D	1	2.0	0.39	10	0.01	5.0
80-022	RAINBOW DARTER	I	M	S	D	2	4.0	0.78	6	0.00	1.5
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.39	430	0.32	215.0
85-001	FRESHWATER DRUM		P	M		3	6.0	1.16	9200	6.77	1533.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

No Species: 36	Nat. Species: 36	Hybrids: 1	Total Counted: 258	Total Rel. Wt. : 135880
IBI: 50.0	MIwb: 10.9			

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR15 River: 02-001 Scioto River RM: 113.85 Date: 10/06/2020
 Time Fished: 2754 Distance: 0.500 Drainge (sq mi): 2280.0 Depth: 0
 Location: Dst. St. Rt. 762 Lat: 39.75947 Long: -82.99915

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		5	10.0	1.81	900	0.60	90.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.36	4800	3.20	2400.0
40-004	SMALLMOUTH BUFFALO	I		M	C	9	18.0	3.25	33000	21.98	1833.3
40-006						3	6.0	1.08	4800	3.20	800.0
40-009	BLACK REDHORSE	I	I	S	R	1	2.0	0.36	1600	1.07	800.0
40-010	GOLDEN REDHORSE	I	M	S	R	11	22.0	3.97	8560	5.70	389.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	29	58.0	10.47	26240	17.47	452.4
40-023	SMALLMOUTH REDHORSE	I	M	S	R	15	30.0	5.42	22400	14.92	746.6
43-001	COMMON CARP	O	T	M	G	5	10.0	1.81	28800	19.18	2880.0
43-007	BIGEYE CHUB	I	I	S	N	2	4.0	0.72	6	0.00	1.5
43-008	STREAMLINE CHUB	I	R	S	N	27	54.0	9.75	300	0.20	5.5
43-009	GRAVEL CHUB	I	M	S	N	15	30.0	5.42	106	0.07	3.5
43-015	SUCKERMOUTH MINNOW	I		S	N	1	2.0	0.36	12	0.01	6.0
43-020	EMERALD SHINER	I		M	N	54	108.0	19.49	190	0.13	1.7
43-021	SILVER SHINER	I	I	S	N	4	8.0	1.44	20	0.01	2.5
43-022	ROSYFACE SHINER	I	I	S	N	7	14.0	2.53	10	0.01	0.7
43-031	STEELCOLOR SHINER	I	P	M	N	9	18.0	3.25	90	0.06	5.0
43-032	SPOTFIN SHINER	I		M	N	11	22.0	3.97	60	0.04	2.7
43-041	BULLHEAD MINNOW	O		C	N	6	12.0	2.17	44	0.03	3.6
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.36	8	0.01	4.0
43-044	CENTRAL STONEROLLER	H		N	N	6	12.0	2.17	140	0.09	11.6
43-063	CHANNEL SHINER	I	I	M	N	8	16.0	2.89	30	0.02	1.8
47-002	CHANNEL CATFISH			C	F	6	12.0	2.17	15600	10.39	1300.0
77-004	SMALLMOUTH BASS	C	M	C	F	3	6.0	1.08	1420	0.95	236.6
77-005	SPOTTED BASS	C		C	F	2	4.0	0.72	20	0.01	5.0
77-008	GREEN SUNFISH	I	T	C	S	1	2.0	0.36	20	0.01	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.72	100	0.07	25.0
80-004	DUSKY DARTER	I	M	S	D	2	4.0	0.72	8	0.01	2.0
80-011	LOGPERCH	I	M	S	D	4	8.0	1.44	200	0.13	25.0
80-015	GREENSIDE DARTER	I	M	S	D	8	16.0	2.89	40	0.03	2.5
80-016	BANDED DARTER	I	I	S	D	6	12.0	2.17	16	0.01	1.3
80-019	BLUEBREAST DARTER	I	R	S	D	2	4.0	0.72	6	0.00	1.5
80-020	TIPPECANOE DARTER	I	R	S	D	3	6.0	1.08	6	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	6	12.0	2.17	16	0.01	1.3
80-024	FANTAIL DARTER	I		C	D	1	2.0	0.36	2	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.36	600	0.40	300.0

No Species: 34 **Nat. Species:** 34 **Hybrids:** 1 **Total Counted:** 277 **Total Rel. Wt. :** 150170
IBI: 52.0 **MIwb:** 10.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR16 River: 02-001 Scioto River RM: 109.23 Date: 09/16/2020

Time Fished: 2494 Distance: 0.500 Drainge (sq mi): 2310.0 Depth: 0

Location: Dst. St. Rt, 316 Lat: 39.71957 Long: -83.01269

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		13	26.0	3.01	1700	1.90	65.3
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.23	5400	6.04	2700.0
40-004	SMALLMOUTH BUFFALO	I		M	C	4	8.0	0.93	21600	24.18	2700.0
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.46	5600	6.27	1400.0
40-010	GOLDEN REDHORSE	I	M	S	R	8	16.0	1.85	4920	5.51	307.5
40-013	RIVER REDHORSE	I	I	S	R	2	4.0	0.46	13400	15.00	3350.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	17	34.0	3.94	4980	5.57	146.4
40-023	SMALLMOUTH REDHORSE	I	M	S	R	12	24.0	2.78	14200	15.89	591.6
43-007	BIGEYE CHUB	I	I	S	N	2	4.0	0.46	8	0.01	2.0
43-008	STREAMLINE CHUB	I	R	S	N	1	2.0	0.23	10	0.01	5.0
43-009	GRAVEL CHUB	I	M	S	N	42	84.0	9.72	300	0.34	3.5
43-015	SUCKERMOUTH MINNOW	I		S	N	34	68.0	7.87	360	0.40	5.2
43-020	EMERALD SHINER	I		M	N	92	184.0	21.30	284	0.32	1.5
43-025	STRIPED SHINER	I		S	N	3	6.0	0.69	20	0.02	3.3
43-027	RIVER SHINER	I		S	N	10	20.0	2.31	100	0.11	5.0
43-031	STEELCOLOR SHINER	I	P	M	N	1	2.0	0.23	10	0.01	5.0
43-032	SPOTFIN SHINER	I		M	N	22	44.0	5.09	140	0.16	3.1
43-034	SAND SHINER	I	M	M	N	41	82.0	9.49	100	0.11	1.2
43-041	BULLHEAD MINNOW	O		C	N	3	6.0	0.69	20	0.02	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	3	6.0	0.69	14	0.02	2.3
43-044	CENTRAL STONEROLLER	H		N	N	40	80.0	9.26	320	0.36	4.0
43-063	CHANNEL SHINER	I	I	M	N	51	102.0	11.81	164	0.18	1.6
47-002	CHANNEL CATFISH			C	F	3	6.0	0.69	5020	5.62	836.6
74-001	WHITE BASS	P		M	F	1	2.0	0.23	100	0.11	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	1.85	1300	1.46	81.2
77-005	SPOTTED BASS	C		C	F	3	6.0	0.69	480	0.54	80.0
77-009	BLUEGILL SUNFISH	I	P	C	S	1	2.0	0.23	20	0.02	10.0
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.23	140	0.16	70.0
80-001	SAUGER	P		S	F	1	2.0	0.23	1000	1.12	500.0
80-015	GREENSIDE DARTER	I	M	S	D	4	8.0	0.93	24	0.03	3.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.23	2	0.00	1.0
80-017	VARIEGATE DARTER	I	I	S	D	1	2.0	0.23	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.23	600	0.67	300.0
85-001	FRESHWATER DRUM		P	M		3	6.0	0.69	7000	7.84	1166.6

No Species: 32 **Nat. Species:** 32 **Hybrids:** 1 **Total Counted:** 432 **Total Rel. Wt. :** 89340

IBI: 44.0 **MIwb:** 10.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR16 River: 02-001 Scioto River RM: 109.23 Date: 10/07/2020
 Time Fished: 2209 Distance: 0.500 Drainge (sq mi): 2310.0 Depth: 0
 Location: Dst. St. Rt, 316 Lat: 39.71957 Long: -83.01269

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		1	2.0	0.22	1600	0.84	800.0
20-003	GIZZARD SHAD	O		M		13	26.0	2.85	3600	1.90	138.4
40-003	BLACK BUFFALO	I		M	C	2	4.0	0.44	11000	5.80	2750.0
40-004	SMALLMOUTH BUFFALO	I		M	C	22	44.0	4.82	80200	42.31	1822.7
40-005	QUILLBACK CARPSUCKER	O		M	C	5	10.0	1.10	7200	3.80	720.0
40-006						7	14.0	1.54	11600	6.12	828.5
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.44	10600	5.59	2650.0
40-010	GOLDEN REDHORSE	I	M	S	R	6	12.0	1.32	7800	4.12	650.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	16	32.0	3.51	2520	1.33	78.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	14	28.0	3.07	17240	9.10	615.7
43-006	SILVER CHUB	I		M	N	1	2.0	0.22	40	0.02	20.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.22	6	0.00	3.0
43-008	STREAMLINE CHUB	I	R	S	N	4	8.0	0.88	80	0.04	10.0
43-009	GRAVEL CHUB	I	M	S	N	34	68.0	7.46	340	0.18	5.0
43-015	SUCKERMOUTH MINNOW	I		S	N	11	22.0	2.41	140	0.07	6.3
43-020	EMERALD SHINER	I		M	N	97	194.0	21.27	320	0.17	1.6
43-022	ROSYFACE SHINER	I	I	S	N	10	20.0	2.19	20	0.01	1.0
43-025	STRIPED SHINER	I		S	N	2	4.0	0.44	6	0.00	1.5
43-027	RIVER SHINER	I		S	N	13	26.0	2.85	90	0.05	3.4
43-031	STEELCOLOR SHINER	I	P	M	N	38	76.0	8.33	230	0.12	3.0
43-032	SPOTFIN SHINER	I		M	N	12	24.0	2.63	100	0.05	4.1
43-034	SAND SHINER	I	M	M	N	16	32.0	3.51	30	0.02	0.9
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	0.44	2	0.00	0.5
43-044	CENTRAL STONEROLLER	H		N	N	12	24.0	2.63	160	0.08	6.6
43-063	CHANNEL SHINER	I	I	M	N	78	156.0	17.11	300	0.16	1.9
47-002	CHANNEL CATFISH			C	F	2	4.0	0.44	1020	0.54	255.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.22	60	0.03	30.0
77-004	SMALLMOUTH BASS	C	M	C	F	4	8.0	0.88	700	0.37	87.5
77-006	LARGEMOUTH BASS	C		C	F	4	8.0	0.88	500	0.26	62.5
80-001	SAUGER	P		S	F	1	2.0	0.22	700	0.37	350.0
80-011	LOGPERCH	I	M	S	D	7	14.0	1.54	140	0.07	10.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.22	6	0.00	3.0
80-026	SAUGER X WALLEYE	P			E	4	8.0	0.88	2600	1.37	325.0
85-001	FRESHWATER DRUM		P	M		13	26.0	2.85	28600	15.09	1100.0

No Species: 32 **Nat. Species:** 33 **Hybrids:** 1 **Total Counted:** 456 **Total Rel. Wt. :** 189550

IBI: 46.0 **MIwb:** 10.6

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR17 River: 02-001 Scioto River RM: 107.35 Date: 09/16/2020

Time Fished: 2802 Distance: 0.500 Drainge (sq mi): 2320.0 Depth: 0

Location: ust. Walnut Creek Lat: 39.69640 Long: -83.00313

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		19	38.0	9.74	1480	0.86	38.9
40-002	BIGMOUTH BUFFALO	I		M	C	1	2.0	0.51	16000	9.26	8000.0
40-003	BLACK BUFFALO	I		M	C	2	4.0	1.03	9600	5.55	2400.0
40-004	SMALLMOUTH BUFFALO	I		M	C	26	52.0	13.33	66400	38.42	1276.9
40-006						7	14.0	3.59	11400	6.60	814.2
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	1.03	6400	3.70	1600.0
40-010	GOLDEN REDHORSE	I	M	S	R	6	12.0	3.08	5800	3.36	483.3
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.51	8600	4.98	4300.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	6	12.0	3.08	800	0.46	66.6
40-023	SMALLMOUTH REDHORSE	I	M	S	R	21	42.0	10.77	29260	16.93	696.6
43-001	COMMON CARP	O	T	M	G	1	2.0	0.51	6800	3.93	3400.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.51	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	3	6.0	1.54	100	0.06	16.6
43-009	GRAVEL CHUB	I	M	S	N	14	28.0	7.18	140	0.08	5.0
43-015	SUCKERMOUTH MINNOW	I		S	N	4	8.0	2.05	20	0.01	2.5
43-020	EMERALD SHINER	I		M	N	27	54.0	13.85	40	0.02	0.7
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.51	2	0.00	1.0
43-032	SPOTFIN SHINER	I		M	N	4	8.0	2.05	60	0.03	7.5
43-034	SAND SHINER	I	M	M	N	16	32.0	8.21	80	0.05	2.5
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	1.03	8	0.00	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	3	6.0	1.54	14	0.01	2.3
43-044	CENTRAL STONEROLLER	H		N	N	2	4.0	1.03	20	0.01	5.0
77-004	SMALLMOUTH BASS	C	M	C	F	6	12.0	3.08	2140	1.24	178.3
77-005	SPOTTED BASS	C		C	F	5	10.0	2.56	200	0.12	20.0
77-008	GREEN SUNFISH	I	T	C	S	1	2.0	0.51	20	0.01	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	9	18.0	4.62	180	0.10	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	1	2.0	0.51	20	0.01	10.0
80-004	DUSKY DARTER	I	M	S	D	1	2.0	0.51	40	0.02	20.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.51	3200	1.85	1600.0
85-001	FRESHWATER DRUM		P	M		2	4.0	1.03	4000	2.31	1000.0

No Species: 28 **Nat. Species:** 28 **Hybrids:** 1 **Total Counted:** 195 **Total Rel. Wt. :** 172828

IBI: 48.0 **MIwb:** 10.2

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR17 River: 02-001 Scioto River RM: 107.35 Date: 10/07/2020
 Time Fished: 2540 Distance: 0.500 Drainge (sq mi): 2320.0 Depth: 0
 Location: ust. Walnut Creek Lat: 39.69640 Long: -83.00313

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		7	14.0	3.06	1700	1.12	121.4
40-004	SMALLMOUTH BUFFALO	I		M	C	20	40.0	8.73	68200	44.79	1705.0
40-005	QUILLBACK CARPSUCKER	O		M	C	3	6.0	1.31	4600	3.02	766.6
40-006						7	14.0	3.06	12400	8.14	885.7
40-010	GOLDEN REDHORSE	I	M	S	R	10	20.0	4.37	8500	5.58	425.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.44	7000	4.60	3500.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	15	30.0	6.55	6900	4.53	230.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	15	30.0	6.55	17470	11.47	582.3
43-008	STREAMLINE CHUB	I	R	S	N	5	10.0	2.18	100	0.07	10.0
43-009	GRAVEL CHUB	I	M	S	N	13	26.0	5.68	200	0.13	7.6
43-015	SUCKERMOUTH MINNOW	I		S	N	4	8.0	1.75	80	0.05	10.0
43-020	EMERALD SHINER	I		M	N	38	76.0	16.59	130	0.09	1.7
43-021	SILVER SHINER	I	I	S	N	6	12.0	2.62	80	0.05	6.6
43-022	ROSYFACE SHINER	I	I	S	N	2	4.0	0.87	4	0.00	1.0
43-031	STEELCOLOR SHINER	I	P	M	N	1	2.0	0.44	4	0.00	2.0
43-032	SPOTFIN SHINER	I		M	N	2	4.0	0.87	10	0.01	2.5
43-041	BULLHEAD MINNOW	O		C	N	1	2.0	0.44	6	0.00	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.44	4	0.00	2.0
43-044	CENTRAL STONEROLLER	H		N	N	6	12.0	2.62	140	0.09	11.6
43-063	CHANNEL SHINER	I	I	M	N	33	66.0	14.41	130	0.09	1.9
47-002	CHANNEL CATFISH			C	F	5	10.0	2.18	11100	7.29	1110.0
47-004	YELLOW BULLHEAD	I	T	C		1	2.0	0.44	100	0.07	50.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.44	400	0.26	200.0
77-004	SMALLMOUTH BASS	C	M	C	F	13	26.0	5.68	2540	1.67	97.6
77-005	SPOTTED BASS	C		C	F	9	18.0	3.93	3400	2.23	188.8
80-001	SAUGER	P		S	F	2	4.0	0.87	1360	0.89	340.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.44	6	0.00	3.0
80-011	LOGPERCH	I	M	S	D	2	4.0	0.87	100	0.07	25.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.44	4	0.00	2.0
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.87	4	0.00	1.0
85-001	FRESHWATER DRUM		P	M		2	4.0	0.87	5600	3.68	1400.0

No Species: 30 **Nat. Species:** 31 **Hybrids:** 0 **Total Counted:** 229 **Total Rel. Wt. :** 152272
IBI: 52.0 **MIwb:** 10.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR18 River: 02-001 Scioto River RM: 105.10 Date: 09/16/2020
 Time Fished: 2312 Distance: 0.500 Drainge (sq mi): 2610.0 Depth: 0
 Location: dst. Walnut Creek Lat: 39.67080 Long: -82.99047

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		162	324.0	49.69	2440	1.70	7.5
40-003	BLACK BUFFALO	I		M	C	2	4.0	0.61	14400	10.05	3600.0
40-004	SMALLMOUTH BUFFALO	I		M	C	10	20.0	3.07	35600	24.86	1780.0
40-006						2	4.0	0.61	3600	2.51	900.0
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	1.53	6000	4.19	600.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.31	6400	4.47	3200.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	7	14.0	2.15	4400	3.07	314.2
40-023	SMALLMOUTH REDHORSE	I	M	S	R	13	26.0	3.99	16400	11.45	630.7
43-001	COMMON CARP	O	T	M	G	2	4.0	0.61	11200	7.82	2800.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.31	4	0.00	2.0
43-009	GRAVEL CHUB	I	M	S	N	1	2.0	0.31	16	0.01	8.0
43-015	SUCKERMOUTH MINNOW	I		S	N	2	4.0	0.61	20	0.01	5.0
43-020	EMERALD SHINER	I		M	N	26	52.0	7.98	90	0.06	1.7
43-027	RIVER SHINER	I		S	N	5	10.0	1.53	40	0.03	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	10	20.0	3.07	50	0.03	2.5
43-032	SPOTFIN SHINER	I		M	N	9	18.0	2.76	60	0.04	3.3
43-034	SAND SHINER	I	M	M	N	21	42.0	6.44	60	0.04	1.4
43-043	BLUNTNOSE MINNOW	O	T	C	N	4	8.0	1.23	12	0.01	1.5
43-044	CENTRAL STONEROLLER	H		N	N	3	6.0	0.92	12	0.01	2.0
43-063	CHANNEL SHINER	I	I	M	N	17	34.0	5.21	52	0.04	1.5
47-002	CHANNEL CATFISH			C	F	2	4.0	0.61	4620	3.23	1155.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.31	16000	11.17	8000.0
77-003	ROCK BASS	C		C	S	2	4.0	0.61	220	0.15	55.0
77-004	SMALLMOUTH BASS	C	M	C	F	1	2.0	0.31	240	0.17	120.0
77-005	SPOTTED BASS	C		C	F	3	6.0	0.92	340	0.24	56.6
77-009	BLUEGILL SUNFISH	I	P	C	S	2	4.0	0.61	200	0.14	50.0
77-011	LONGEAR SUNFISH	I	M	C	S	1	2.0	0.31	20	0.01	10.0
80-004	DUSKY DARTER	I	M	S	D	1	2.0	0.31	20	0.01	10.0
80-005	BLACKSIDE DARTER	I		S	D	1	2.0	0.31	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	3	6.0	0.92	6200	4.33	1033.3
85-001	FRESHWATER DRUM		P	M		6	12.0	1.84	14500	10.12	1208.3

No Species: 29 **Nat. Species:** 29 **Hybrids:** 1 **Total Counted:** 326 **Total Rel. Wt. :** 143220
IBI: 46.0 **MIwb:** 10.3

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR18 River: 02-001 Scioto River RM: 105.10 Date: 10/07/2020

Time Fished: 2418 Distance: 0.500 Drainge (sq mi): 2610.0 Depth: 0

Location: dst. Walnut Creek Lat: 39.67080 Long: -82.99047

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
10-004	LONGNOSE GAR	P		M		2	4.0	0.53	3200	1.58	800.0
20-003	GIZZARD SHAD	O		M		30	60.0	7.98	6320	3.12	105.3
40-003	BLACK BUFFALO	I		M	C	5	10.0	1.33	21800	10.76	2180.0
40-004	SMALLMOUTH BUFFALO	I		M	C	10	20.0	2.66	35600	17.57	1780.0
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.53	3400	1.68	850.0
40-006						7	14.0	1.86	12200	6.02	871.4
40-010	GOLDEN REDHORSE	I	M	S	R	12	24.0	3.19	14400	7.11	600.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	12	24.0	3.19	6000	2.96	250.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	26	52.0	6.91	33200	16.38	638.4
43-001	COMMON CARP	O	T	M	G	1	2.0	0.27	3000	1.48	1500.0
43-009	GRAVEL CHUB	I	M	S	N	16	32.0	4.26	200	0.10	6.2
43-015	SUCKERMOUTH MINNOW	I		S	N	10	20.0	2.66	140	0.07	7.0
43-020	EMERALD SHINER	I		M	N	54	108.0	14.36	160	0.08	1.4
43-022	ROSYFACE SHINER	I	I	S	N	5	10.0	1.33	12	0.01	1.2
43-025	STRIPED SHINER	I		S	N	1	2.0	0.27	4	0.00	2.0
43-027	RIVER SHINER	I		S	N	9	18.0	2.39	54	0.03	3.0
43-031	STEELCOLOR SHINER	I	P	M	N	3	6.0	0.80	20	0.01	3.3
43-032	SPOTFIN SHINER	I		M	N	1	2.0	0.27	4	0.00	2.0
43-034	SAND SHINER	I	M	M	N	47	94.0	12.50	100	0.05	1.0
43-044	CENTRAL STONEROLLER	H		N	N	19	38.0	5.05	160	0.08	4.2
43-063	CHANNEL SHINER	I	I	M	N	58	116.0	15.43	230	0.11	1.9
47-002	CHANNEL CATFISH			C	F	5	10.0	1.33	11000	5.43	1100.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.53	8800	4.34	2200.0
74-001	WHITE BASS	P		M	F	1	2.0	0.27	60	0.03	30.0
74-005	Striped X White Bass				E	1	2.0	0.27	60	0.03	30.0
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.27	340	0.17	170.0
77-004	SMALLMOUTH BASS	C	M	C	F	3	6.0	0.80	1280	0.63	213.3
77-005	SPOTTED BASS	C		C	F	4	8.0	1.06	2610	1.29	326.2
77-009	BLUEGILL SUNFISH	I	P	C	S	1	2.0	0.27	20	0.01	10.0
80-001	SAUGER	P		S	F	1	2.0	0.27	1800	0.89	900.0
80-011	LOGPERCH	I	M	S	D	9	18.0	2.39	260	0.13	14.4
80-014	JOHNNY DARTER	I		C	D	1	2.0	0.27	4	0.00	2.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.27	2	0.00	1.0
80-026	SAUGER X WALLEYE	P			E	7	14.0	1.86	10600	5.23	757.1
85-001	FRESHWATER DRUM		P	M		9	18.0	2.39	25600	12.63	1422.2

No Species: 32 **Nat. Species:** 32 **Hybrids:** 2 **Total Counted:** 376 **Total Rel. Wt. :** 202640

IBI: 48.0 **MIwb:** 10.9

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR19 River: 02-001 Scioto River RM: 101.83 Date: 09/16/2020

Time Fished: 2657 Distance: 0.500 Drainge (sq mi): 2640.0 Depth: 0

Location: Dst. Commercial Point Rd. bridge Lat: 39.63095 Long: -82.96144

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		16	32.0	5.61	3960	3.54	123.7
40-004	SMALLMOUTH BUFFALO	I		M	C	2	4.0	0.70	8000	7.16	2000.0
40-006						2	4.0	0.70	3000	2.68	750.0
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.70	5200	4.65	1300.0
40-009	BLACK REDHORSE	I	I	S	R	1	2.0	0.35	2200	1.97	1100.0
40-010	GOLDEN REDHORSE	I	M	S	R	2	4.0	0.70	3800	3.40	950.0
40-013	RIVER REDHORSE	I	I	S	R	2	4.0	0.70	16600	14.86	4150.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	13	26.0	4.56	4460	3.99	171.5
40-023	SMALLMOUTH REDHORSE	I	M	S	R	22	44.0	7.72	31200	27.92	709.0
43-008	STREAMLINE CHUB	I	R	S	N	7	14.0	2.46	164	0.15	11.7
43-009	GRAVEL CHUB	I	M	S	N	43	86.0	15.09	360	0.32	4.1
43-015	SUCKERMOUTH MINNOW	I		S	N	11	22.0	3.86	100	0.09	4.5
43-020	EMERALD SHINER	I		M	N	34	68.0	11.93	100	0.09	1.4
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.35	6	0.01	3.0
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.35	2	0.00	1.0
43-025	STRIPED SHINER	I		S	N	2	4.0	0.70	4	0.00	1.0
43-031	STEELCOLOR SHINER	I	P	M	N	5	10.0	1.75	44	0.04	4.4
43-032	SPOTFIN SHINER	I		M	N	9	18.0	3.16	46	0.04	2.5
43-034	SAND SHINER	I	M	M	N	4	8.0	1.40	12	0.01	1.5
43-041	BULLHEAD MINNOW	O		C	N	6	12.0	2.11	50	0.04	4.1
43-043	BLUNTNOSE MINNOW	O	T	C	N	3	6.0	1.05	20	0.02	3.3
43-044	CENTRAL STONEROLLER	H		N	N	6	12.0	2.11	60	0.05	5.0
43-063	CHANNEL SHINER	I	I	M	N	28	56.0	9.82	100	0.09	1.7
47-002	CHANNEL CATFISH			C	F	2	4.0	0.70	3400	3.04	850.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.70	3200	2.86	800.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.35	10	0.01	5.0
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.35	100	0.09	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	7	14.0	2.46	2940	2.63	210.0
77-005	SPOTTED BASS	C		C	F	5	10.0	1.75	1280	1.15	128.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.35	40	0.04	20.0
77-008	GREEN SUNFISH	I	T	C	S	4	8.0	1.40	100	0.09	12.5
77-009	BLUEGILL SUNFISH	I	P	C	S	5	10.0	1.75	360	0.32	36.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.70	80	0.07	20.0
80-001	SAUGER	P		S	F	1	2.0	0.35	800	0.72	400.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.35	4	0.00	2.0
80-011	LOGPERCH	I	M	S	D	1	2.0	0.35	40	0.04	20.0
80-015	GREENSIDE DARTER	I	M	S	D	4	8.0	1.40	20	0.02	2.5
80-016	BANDED DARTER	I	I	S	D	6	12.0	2.11	20	0.02	1.6
80-017	VARIEGATE DARTER	I	I	S	D	6	12.0	2.11	28	0.03	2.3
80-019	BLUEBREAST DARTER	I	R	S	D	3	6.0	1.05	20	0.02	3.3

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR19 River: 02-001 Scioto River RM: 101.83 Date: 09/16/2020

Time Fished: 2657 Distance: 0.500 Drainge (sq mi): 2640.0 Depth: 0

Location: Dst. Commercial Point Rd. bridge Lat: 39.63095 Long: -82.96144

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-020	TIPPECANOE DARTER	I	R	S	D	1	2.0	0.35	2	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	3	6.0	1.05	8	0.01	1.3
85-001	FRESHWATER DRUM		P	M		7	14.0	2.46	19800	17.72	1414.2

No Species: 42 **Nat. Species:** 43 **Hybrids:** 0 **Total Counted:** 285 **Total Rel. Wt. :** 111740

IBI: 54.0 **MIwb:** 10.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR19 River: 02-001 Scioto River RM: 101.83 Date: 10/07/2020

Time Fished: 2430 Distance: 0.500 Drainge (sq mi): 2640.0 Depth: 0

Location: Dst. Commercial Point Rd. bridge Lat: 39.63095 Long: -82.96144

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		10	20.0	3.83	4400	3.99	220.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.38	8600	7.81	4300.0
40-004	SMALLMOUTH BUFFALO	I		M	C	4	8.0	1.53	15000	13.61	1875.0
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	1.92	9000	8.17	900.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	17	34.0	6.51	6620	6.01	194.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	18	36.0	6.90	25200	22.87	700.0
43-001	COMMON CARP	O	T	M	G	1	2.0	0.38	6800	6.17	3400.0
43-008	STREAMLINE CHUB	I	R	S	N	5	10.0	1.92	140	0.13	14.0
43-009	GRAVEL CHUB	I	M	S	N	13	26.0	4.98	160	0.15	6.1
43-015	SUCKERMOUTH MINNOW	I		S	N	17	34.0	6.51	160	0.15	4.7
43-020	EMERALD SHINER	I		M	N	65	130.0	24.90	210	0.19	1.6
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.38	2	0.00	1.0
43-031	STEELCOLOR SHINER	I	P	M	N	8	16.0	3.07	80	0.07	5.0
43-032	SPOTFIN SHINER	I		M	N	2	4.0	0.77	16	0.01	4.0
43-034	SAND SHINER	I	M	M	N	2	4.0	0.77	6	0.01	1.5
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	0.77	10	0.01	2.5
43-044	CENTRAL STONEROLLER	H		N	N	10	20.0	3.83	140	0.13	7.0
43-063	CHANNEL SHINER	I	I	M	N	13	26.0	4.98	54	0.05	2.0
47-002	CHANNEL CATFISH			C	F	5	10.0	1.92	16800	15.25	1680.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.38	5200	4.72	2600.0
77-004	SMALLMOUTH BASS	C	M	C	F	9	18.0	3.45	4620	4.19	256.6
77-005	SPOTTED BASS	C		C	F	13	26.0	4.98	1540	1.40	59.2
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.77	100	0.09	25.0
80-007	SLENDERHEAD DARTER	I	R	S	D	2	4.0	0.77	8	0.01	2.0
80-011	LOGPERCH	I	M	S	D	1	2.0	0.38	20	0.02	10.0
80-015	GREENSIDE DARTER	I	M	S	D	3	6.0	1.15	20	0.02	3.3
80-016	BANDED DARTER	I	I	S	D	4	8.0	1.53	20	0.02	2.5
80-017	VARIEGATE DARTER	I	I	S	D	22	44.0	8.43	140	0.13	3.1
80-019	BLUEBREAST DARTER	I	R	S	D	2	4.0	0.77	8	0.01	2.0
85-001	FRESHWATER DRUM		P	M		3	6.0	1.15	5100	4.63	850.0

No Species: 29 **Nat. Species:** 29 **Hybrids:** 0 **Total Counted:** 261 **Total Rel. Wt. :** 110174
IBI: 48.0 **MIwb:** 10.4

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR20 River: 02-001 Scioto River RM: 100.05 Date: 08/31/2020
 Time Fished: 3385 Distance: 0.500 Drainge (sq mi): 3200.0 Depth: 0
 Location: Circleville riffle (Ust. U.S. Rt. 22) Lat: 39.60702 Long: -82.95771

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		15	30.0	3.76	2960	2.92	98.6
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.25	3200	3.15	1600.0
40-004	SMALLMOUTH BUFFALO	I		M	C	9	18.0	2.26	26000	25.63	1444.4
40-006						11	22.0	2.76	17200	16.96	781.8
40-010	GOLDEN REDHORSE	I	M	S	R	3	6.0	0.75	2230	2.20	371.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	28	56.0	7.02	10280	10.13	183.5
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.25	20	0.02	10.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	10	20.0	2.51	9840	9.70	492.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.25	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	5	10.0	1.25	120	0.12	12.0
43-009	GRAVEL CHUB	I	M	S	N	36	72.0	9.02	180	0.18	2.5
43-015	SUCKERMOUTH MINNOW	I		S	N	17	34.0	4.26	80	0.08	2.3
43-020	EMERALD SHINER	I		M	N	46	92.0	11.53	170	0.17	1.8
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.25	2	0.00	1.0
43-025	STRIPED SHINER	I		S	N	1	2.0	0.25	2	0.00	1.0
43-031	STEELCOLOR SHINER	I	P	M	N	4	8.0	1.00	30	0.03	3.7
43-032	SPOTFIN SHINER	I		M	N	28	56.0	7.02	120	0.12	2.1
43-034	SAND SHINER	I	M	M	N	79	158.0	19.80	210	0.21	1.3
43-041	BULLHEAD MINNOW	O		C	N	3	6.0	0.75	20	0.02	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	0.50	6	0.01	1.5
43-044	CENTRAL STONEROLLER	H		N	N	16	32.0	4.01	140	0.14	4.3
43-063	CHANNEL SHINER	I	I	M	N	12	24.0	3.01	36	0.04	1.5
47-002	CHANNEL CATFISH			C	F	2	4.0	0.50	5200	5.13	1300.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.50	2200	2.17	550.0
74-001	WHITE BASS	P		M	F	1	2.0	0.25	280	0.28	140.0
74-005	Striped X White Bass				E	1	2.0	0.25	2000	1.97	1000.0
77-004	SMALLMOUTH BASS	C	M	C	F	10	20.0	2.51	1700	1.68	85.0
77-005	SPOTTED BASS	C		C	F	8	16.0	2.01	2240	2.21	140.0
77-006	LARGEMOUTH BASS	C		C	F	3	6.0	0.75	60	0.06	10.0
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	0.75	80	0.08	13.3
77-009	BLUEGILL SUNFISH	I	P	C	S	7	14.0	1.75	400	0.39	28.5
77-011	LONGEAR SUNFISH	I	M	C	S	8	16.0	2.01	220	0.22	13.7
77-012	REDEAR SUNFISH	I		C	E	2	4.0	0.50	140	0.14	35.0
77-013	PUMPKINSEED SUNFISH	I	P	C	S	1	2.0	0.25	140	0.14	70.0
80-001	SAUGER	P		S	F	2	4.0	0.50	1600	1.58	400.0
80-002	WALLEYE	P		S	F	2	4.0	0.50	4000	3.94	1000.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.25	2	0.00	1.0
80-017	VARIEGATE DARTER	I	I	S	D	8	16.0	2.01	40	0.04	2.5
80-022	RAINBOW DARTER	I	M	S	D	3	6.0	0.75	6	0.01	1.0
80-026	SAUGER X WALLEYE	P			E	2	4.0	0.50	3080	3.04	770.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR20 River: 02-001 Scioto River RM: 100.05 Date: 08/31/2020

Time Fished: 3385 Distance: 0.500 Drainge (sq mi): 3200.0 Depth: 0

Location: Circleville riffle (Ust. U.S. Rt. 22) Lat: 39.60702 Long: -82.95771

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
85-001	FRESHWATER DRUM		P	M		4	8.0	1.00	5200	5.13	650.0

No Species: 38 **Nat. Species:** 38 **Hybrids:** 2 **Total Counted:** 399 **Total Rel. Wt. :** 101438

IBI: 52.0 **MIwb:** 10.7

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR20 River: 02-001 Scioto River RM: 100.05 Date: 10/06/2020

Time Fished: 4479 Distance: 0.500 Drainge (sq mi): 3200.0 Depth: 0

Location: Circleville riffle (Ust. U.S. Rt. 22) Lat: 39.60702 Long: -82.95771

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
01-001	Silver Lamprey	P		N		1	2.0	0.19	80	0.07	40.0
20-003	GIZZARD SHAD	O		M		35	70.0	6.80	6000	5.07	85.7
37-004	MUSKELLUNGE	P		M	F	1	2.0	0.19	7400	6.26	3700.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.19	5400	4.56	2700.0
40-004	SMALLMOUTH BUFFALO	I		M	C	4	8.0	0.78	13800	11.67	1725.0
40-006						7	14.0	1.36	11000	9.30	785.7
40-010	GOLDEN REDHORSE	I	M	S	R	5	10.0	0.97	2900	2.45	290.0
40-018	SPOTTED SUCKER	I		S	R	1	2.0	0.19	20	0.02	10.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	2	4.0	0.39	3000	2.54	750.0
43-001	COMMON CARP	O	T	M	G	4	8.0	0.78	17200	14.54	2150.0
43-009	GRAVEL CHUB	I	M	S	N	31	62.0	6.02	360	0.30	5.8
43-015	SUCKERMOUTH MINNOW	I		S	N	5	10.0	0.97	46	0.04	4.6
43-020	EMERALD SHINER	I		M	N	222	444.0	43.11	740	0.63	1.6
43-022	ROSYFACE SHINER	I	I	S	N	5	10.0	0.97	10	0.01	1.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.19	8	0.01	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	4	8.0	0.78	24	0.02	3.0
43-032	SPOTFIN SHINER	I		M	N	21	42.0	4.08	120	0.10	2.8
43-034	SAND SHINER	I	M	M	N	28	56.0	5.44	70	0.06	1.2
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.19	4	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	29	58.0	5.63	150	0.13	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	16	32.0	3.11	9608	8.12	300.2
43-044	CENTRAL STONEROLLER	H		N	N	5	10.0	0.97	100	0.08	10.0
43-063	CHANNEL SHINER	I	I	M	N	6	12.0	1.17	20	0.02	1.6
47-002	CHANNEL CATFISH			C	F	2	4.0	0.39	2400	2.03	600.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.39	23000	19.44	5750.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.19	20	0.02	10.0
77-001	WHITE CRAPPIE	I		C	S	1	2.0	0.19	240	0.20	120.0
77-002	BLACK CRAPPIE	I		C	S	5	10.0	0.97	1460	1.23	146.0
77-004	SMALLMOUTH BASS	C	M	C	F	13	26.0	2.52	5300	4.48	203.8
77-005	SPOTTED BASS	C		C	F	14	28.0	2.72	1380	1.17	49.2
77-008	GREEN SUNFISH	I	T	C	S	1	2.0	0.19	60	0.05	30.0
77-009	BLUEGILL SUNFISH	I	P	C	S	6	12.0	1.17	840	0.71	70.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	4.0	0.39	100	0.08	25.0
80-001	SAUGER	P		S	F	2	4.0	0.39	2200	1.86	550.0
80-004	DUSKY DARTER	I	M	S	D	2	4.0	0.39	12	0.01	3.0
80-011	LOGPERCH	I	M	S	D	3	6.0	0.58	100	0.08	16.6
80-015	GREENSIDE DARTER	I	M	S	D	2	4.0	0.39	12	0.01	3.0
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.39	6	0.01	1.5
80-017	VARIEGATE DARTER	I	I	S	D	19	38.0	3.69	100	0.08	2.6
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.19	4	0.00	2.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR20 River: 02-001 Scioto River RM: 100.05 Date: 10/06/2020

Time Fished: 4479 Distance: 0.500 Drainage (sq mi): 3200.0 Depth: 0

Location: Circleville riffle (Ust. U.S. Rt. 22) Lat: 39.60702 Long: -82.95771

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.19	4	0.00	2.0
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.19	3000	2.54	1500.0

No Species: 40 **Nat. Species:** 40 **Hybrids:** 1 **Total Counted:** 515 **Total Rel. Wt. :** 118298

IBI: 52.0 **MIwb:** 10.4

Appendix Table B-6. Midwest Biodiversity Institute

Fish Species List

Site ID: SR21 River: 02-001 Scioto River RM: 99.35 Date: 08/31/2020

Time Fished: 2825 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0

Location: Ust. Circleville WWTP Lat: 39.59775 Long: -82.95597

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		22	44.0	7.17	2900	3.29	65.9
40-002	BIGMOUTH BUFFALO	I		M	C	1	2.0	0.33	9200	10.43	4600.0
40-004	SMALLMOUTH BUFFALO	I		M	C	3	6.0	0.98	10400	11.79	1733.3
40-005	QUILLBACK CARPSUCKER	O		M	C	1	2.0	0.33	1600	1.81	800.0
40-006						5	10.0	1.63	7400	8.39	740.0
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.65	8400	9.52	2100.0
40-010	GOLDEN REDHORSE	I	M	S	R	8	16.0	2.61	4320	4.90	270.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	3	6.0	0.98	640	0.73	106.6
40-023	SMALLMOUTH REDHORSE	I	M	S	R	14	28.0	4.56	16240	18.41	580.0
43-001	COMMON CARP	O	T	M	G	2	4.0	0.65	8600	9.75	2150.0
43-009	GRAVEL CHUB	I	M	S	N	31	62.0	10.10	300	0.34	4.8
43-015	SUCKERMOUTH MINNOW	I		S	N	22	44.0	7.17	120	0.14	2.7
43-020	EMERALD SHINER	I		M	N	24	48.0	7.82	70	0.08	1.4
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.33	4	0.00	2.0
43-025	STRIPED SHINER	I		S	N	2	4.0	0.65	6	0.01	1.5
43-031	STEELCOLOR SHINER	I	P	M	N	2	4.0	0.65	8	0.01	2.0
43-032	SPOTFIN SHINER	I		M	N	9	18.0	2.93	62	0.07	3.4
43-034	SAND SHINER	I	M	M	N	20	40.0	6.51	60	0.07	1.5
43-041	BULLHEAD MINNOW	O		C	N	2	4.0	0.65	10	0.01	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	11	22.0	3.58	40	0.05	1.8
43-044	CENTRAL STONEROLLER	H		N	N	26	52.0	8.47	320	0.36	6.1
43-063	CHANNEL SHINER	I	I	M	N	8	16.0	2.61	26	0.03	1.6
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.33	5000	5.67	2500.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.33	6	0.01	3.0
74-005	Striped X White Bass				E	1	2.0	0.33	440	0.50	220.0
77-004	SMALLMOUTH BASS	C	M	C	F	5	10.0	1.63	780	0.88	78.0
77-005	SPOTTED BASS	C		C	F	6	12.0	1.95	560	0.63	46.6
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	0.65	40	0.05	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	5	10.0	1.63	200	0.23	20.0
77-011	LONGEAR SUNFISH	I	M	C	S	5	10.0	1.63	160	0.18	16.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.33	80	0.09	40.0
80-002	WALLEYE	P		S	F	1	2.0	0.33	3400	3.85	1700.0
80-007	SLENDERHEAD DARTER	I	R	S	D	2	4.0	0.65	10	0.01	2.5
80-011	LOGPERCH	I	M	S	D	1	2.0	0.33	30	0.03	15.0
80-015	GREENSIDE DARTER	I	M	S	D	4	8.0	1.30	26	0.03	3.2
80-016	BANDED DARTER	I	I	S	D	8	16.0	2.61	22	0.02	1.3
80-017	VARIEGATE DARTER	I	I	S	D	20	40.0	6.51	100	0.11	2.5
80-019	BLUEBREAST DARTER	I	R	S	D	5	10.0	1.63	20	0.02	2.0
80-020	TIPPECANOE DARTER	I	R	S	D	3	6.0	0.98	6	0.01	1.0
80-022	RAINBOW DARTER	I	M	S	D	9	18.0	2.93	40	0.05	2.2

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR21 River: 02-001 Scioto River RM: 99.35 Date: 08/31/2020

Time Fished: 2825 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0

Location: Ust. Circleville WWTP Lat: 39.59775 Long: -82.95597

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-026	SAUGER X WALLEYE	P			E	2	4.0	0.65	3800	4.31	950.0
85-001	FRESHWATER DRUM		P	M		3	6.0	0.98	2760	3.13	460.0
90-002	MOTTLED SCULPIN	I		C		3	6.0	0.98	8	0.01	1.3

No Species: 39 **Nat. Species:** 39 **Hybrids:** 3 **Total Counted:** 307 **Total Rel. Wt. :** 88214

IBI: 52.0 **MIwb:** 10.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR21 River: 02-001 Scioto River RM: 99.35 Date: 10/06/2020
 Time Fished: 2759 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: Ust. Circleville WWTP Lat: 39.59775 Long: -82.95597

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		18	36.0	5.79	7300	7.25	202.7
40-003	BLACK BUFFALO	I		M	C	3	6.0	0.96	40400	40.10	6733.3
40-004	SMALLMOUTH BUFFALO	I		M	C	5	10.0	1.61	18000	17.87	1800.0
40-006						3	6.0	0.96	4200	4.17	700.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	2.0	0.32	120	0.12	60.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.32	6000	5.96	3000.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	7	14.0	2.25	2740	2.72	195.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	13	26.0	4.18	13830	13.73	531.9
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.32	4	0.00	2.0
43-008	STREAMLINE CHUB	I	R	S	N	2	4.0	0.64	40	0.04	10.0
43-009	GRAVEL CHUB	I	M	S	N	36	72.0	11.58	360	0.36	5.0
43-015	SUCKERMOUTH MINNOW	I		S	N	5	10.0	1.61	60	0.06	6.0
43-020	EMERALD SHINER	I		M	N	108	216.0	34.73	360	0.36	1.6
43-021	SILVER SHINER	I	I	S	N	1	2.0	0.32	8	0.01	4.0
43-022	ROSYFACE SHINER	I	I	S	N	3	6.0	0.96	6	0.01	1.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.32	8	0.01	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	3	6.0	0.96	20	0.02	3.3
43-032	SPOTFIN SHINER	I		M	N	6	12.0	1.93	16	0.02	1.3
43-034	SAND SHINER	I	M	M	N	12	24.0	3.86	30	0.03	1.2
43-041	BULLHEAD MINNOW	O		C	N	1	2.0	0.32	8	0.01	4.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	0.64	2	0.00	0.5
43-044	CENTRAL STONEROLLER	H		N	N	10	20.0	3.22	180	0.18	9.0
43-063	CHANNEL SHINER	I	I	M	N	7	14.0	2.25	30	0.03	2.1
77-004	SMALLMOUTH BASS	C	M	C	F	11	22.0	3.54	1400	1.39	63.6
77-005	SPOTTED BASS	C		C	F	21	42.0	6.75	700	0.69	16.6
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	0.96	220	0.22	36.6
77-009	BLUEGILL SUNFISH	I	P	C	S	12	24.0	3.86	800	0.79	33.3
80-004	DUSKY DARTER	I	M	S	D	2	4.0	0.64	10	0.01	2.5
80-011	LOGPERCH	I	M	S	D	3	6.0	0.96	60	0.06	10.0
80-015	GREENSIDE DARTER	I	M	S	D	2	4.0	0.64	8	0.01	2.0
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.64	6	0.01	1.5
80-017	VARIEGATE DARTER	I	I	S	D	2	4.0	0.64	10	0.01	2.5
80-020	TIPPECANOE DARTER	I	R	S	D	2	4.0	0.64	2	0.00	0.5
80-026	SAUGER X WALLEYE	P			E	1	2.0	0.32	2400	2.38	1200.0
85-001	FRESHWATER DRUM		P	M		1	2.0	0.32	1400	1.39	700.0

No Species: 33 **Nat. Species:** 34 **Hybrids:** 1 **Total Counted:** 311 **Total Rel. Wt. :** 100738
IBI: 52.0 **MIwb:** 9.6

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR22 River: 02-001 Scioto River RM: 98.50 Date: 08/31/2020
 Time Fished: 2484 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: Dst. Circleville WWTP Lat: 39.59861 Long: -82.97060

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		2	4.0	1.46	220	0.21	55.0
40-003	BLACK BUFFALO	I		M	C	4	8.0	2.92	25000	23.74	3125.0
40-004	SMALLMOUTH BUFFALO	I		M	C	1	2.0	0.73	2800	2.66	1400.0
40-006						1	2.0	0.73	1600	1.52	800.0
40-008	SILVER REDHORSE	I	M	S	R	1	2.0	0.73	2200	2.09	1100.0
40-010	GOLDEN REDHORSE	I	M	S	R	9	18.0	6.57	8620	8.18	478.8
40-023	SMALLMOUTH REDHORSE	I	M	S	R	4	8.0	2.92	2000	1.90	250.0
43-001	COMMON CARP	O	T	M	G	5	10.0	3.65	24400	23.17	2440.0
43-007	BIGEYE CHUB	I	I	S	N	2	4.0	1.46	4	0.00	1.0
43-008	STREAMLINE CHUB	I	R	S	N	1	2.0	0.73	16	0.02	8.0
43-020	EMERALD SHINER	I		M	N	42	84.0	30.66	120	0.11	1.4
43-025	STRIPED SHINER	I		S	N	1	2.0	0.73	4	0.00	2.0
43-032	SPOTFIN SHINER	I		M	N	13	26.0	9.49	64	0.06	2.4
43-034	SAND SHINER	I	M	M	N	3	6.0	2.19	12	0.01	2.0
43-041	BULLHEAD MINNOW	O		C	N	5	10.0	3.65	20	0.02	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	2	4.0	1.46	10	0.01	2.5
47-002	CHANNEL CATFISH			C	F	10	20.0	7.30	19000	18.04	950.0
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	1.46	3320	3.15	830.0
77-004	SMALLMOUTH BASS	C	M	C	F	5	10.0	3.65	2440	2.32	244.0
77-005	SPOTTED BASS	C		C	F	4	8.0	2.92	530	0.50	66.2
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.73	20	0.02	10.0
77-008	GREEN SUNFISH	I	T	C	S	5	10.0	3.65	180	0.17	18.0
77-009	BLUEGILL SUNFISH	I	P	C	S	2	4.0	1.46	60	0.06	15.0
77-011	LONGEAR SUNFISH	I	M	C	S	3	6.0	2.19	240	0.23	40.0
80-004	DUSKY DARTER	I	M	S	D	2	4.0	1.46	24	0.02	6.0
80-011	LOGPERCH	I	M	S	D	1	2.0	0.73	20	0.02	10.0
85-001	FRESHWATER DRUM		P	M		6	12.0	4.38	12400	11.77	1033.3

No Species: 26 **Nat. Species:** 26 **Hybrids:** 0 **Total Counted:** 137 **Total Rel. Wt. :** 105324
IBI: 44.0 **MIwb:** 9.6

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR22 River: 02-001 Scioto River RM: 98.50 Date: 10/06/2020
 Time Fished: 2695 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: Dst. Circleville WWTP Lat: 39.59861 Long: -82.97060

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		13	26.0	6.13	5900	6.09	226.9
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.47	4000	4.13	2000.0
40-004	SMALLMOUTH BUFFALO	I		M	C	11	22.0	5.19	37600	38.82	1709.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	2.0	0.47	740	0.76	370.0
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.47	6600	6.81	3300.0
40-023	SMALLMOUTH REDHORSE	I	M	S	R	7	14.0	3.30	10400	10.74	742.8
43-001	COMMON CARP	O	T	M	G	2	4.0	0.94	14400	14.87	3600.0
43-007	BIGEYE CHUB	I	I	S	N	1	2.0	0.47	4	0.00	2.0
43-009	GRAVEL CHUB	I	M	S	N	1	2.0	0.47	8	0.01	4.0
43-020	EMERALD SHINER	I		M	N	70	140.0	33.02	200	0.21	1.4
43-021	SILVER SHINER	I	I	S	N	8	16.0	3.77	80	0.08	5.0
43-025	STRIPED SHINER	I		S	N	1	2.0	0.47	4	0.00	2.0
43-031	STEELCOLOR SHINER	I	P	M	N	1	2.0	0.47	4	0.00	2.0
43-032	SPOTFIN SHINER	I		M	N	12	24.0	5.66	40	0.04	1.6
43-035	MIMIC SHINER	I	I	M	N	1	2.0	0.47	4	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	12	24.0	5.66	80	0.08	3.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	1	2.0	0.47	6	0.01	3.0
43-063	CHANNEL SHINER	I	I	M	N	20	40.0	9.43	80	0.08	2.0
47-002	CHANNEL CATFISH			C	F	2	4.0	0.94	4400	4.54	1100.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.47	240	0.25	120.0
77-001	WHITE CRAPPIE	I		C	S	1	2.0	0.47	220	0.23	110.0
77-003	ROCK BASS	C		C	S	1	2.0	0.47	140	0.14	70.0
77-004	SMALLMOUTH BASS	C	M	C	F	10	20.0	4.72	2000	2.07	100.0
77-005	SPOTTED BASS	C		C	F	16	32.0	7.55	2620	2.71	81.8
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	1.42	100	0.10	16.6
77-011	LONGEAR SUNFISH	I	M	C	S	4	8.0	1.89	240	0.25	30.0
80-004	DUSKY DARTER	I	M	S	D	1	2.0	0.47	8	0.01	4.0
80-011	LOGPERCH	I	M	S	D	4	8.0	1.89	120	0.12	15.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.47	10	0.01	5.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.47	2	0.00	1.0
85-001	FRESHWATER DRUM		P	M		3	6.0	1.42	6600	6.81	1100.0

No Species: 30 **Nat. Species:** 30 **Hybrids:** 0 **Total Counted:** 212 **Total Rel. Wt. :** 96850
IBI: 48.0 **MIwb:** 9.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: PAUL-L3 River: 02-001 Scioto River RM: 98.01 Date: 08/31/2020
 Time Fished: 3520 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: dst. Wickett dam Lat: 39.58975 Long: -82.97153

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
01-001	Silver Lamprey	P		N		1	2.0	0.29	20	0.03	10.0
10-004	LONGNOSE GAR	P		M		2	4.0	0.57	2800	3.55	700.0
18-002	MOONEYE	I	R	M		2	4.0	0.57	1100	1.39	275.0
20-003	GIZZARD SHAD	O		M		19	38.0	5.43	5700	7.22	150.0
40-002	BIGMOUTH BUFFALO	I		M	C	1	2.0	0.29	4800	6.08	2400.0
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.29	4600	5.83	2300.0
40-004	SMALLMOUTH BUFFALO	I		M	C	1	2.0	0.29	3000	3.80	1500.0
40-006						2	4.0	0.57	2600	3.30	650.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	2.0	0.29	400	0.51	200.0
40-013	RIVER REDHORSE	I	I	S	R	3	6.0	0.86	18000	22.82	3000.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	22	44.0	6.29	12220	15.49	277.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	14	28.0	4.00	15700	19.90	560.7
43-007	BIGEYE CHUB	I	I	S	N	9	18.0	2.57	24	0.03	1.3
43-008	STREAMLINE CHUB	I	R	S	N	7	14.0	2.00	100	0.13	7.1
43-009	GRAVEL CHUB	I	M	S	N	85	170.0	24.29	800	1.01	4.7
43-020	EMERALD SHINER	I		M	N	33	66.0	9.43	90	0.11	1.3
43-022	ROSYFACE SHINER	I	I	S	N	1	2.0	0.29	4	0.01	2.0
43-025	STRIPED SHINER	I		S	N	1	2.0	0.29	4	0.01	2.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.29	8	0.01	4.0
43-031	STEELCOLOR SHINER	I	P	M	N	9	18.0	2.57	90	0.11	5.0
43-032	SPOTFIN SHINER	I		M	N	22	44.0	6.29	130	0.16	2.9
43-034	SAND SHINER	I	M	M	N	19	38.0	5.43	54	0.07	1.4
43-041	BULLHEAD MINNOW	O		C	N	6	12.0	1.71	22	0.03	1.8
43-043	BLUNTNOSE MINNOW	O	T	C	N	3	6.0	0.86	10	0.01	1.6
43-044	CENTRAL STONEROLLER	H		N	N	16	32.0	4.57	200	0.25	6.2
43-063	CHANNEL SHINER	I	I	M	N	12	24.0	3.43	48	0.06	2.0
47-002	CHANNEL CATFISH			C	F	1	2.0	0.29	16	0.02	8.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.29	1400	1.77	700.0
74-005	Striped X White Bass				E	1	2.0	0.29	560	0.71	280.0
77-004	SMALLMOUTH BASS	C	M	C	F	7	14.0	2.00	1260	1.60	90.0
77-005	SPOTTED BASS	C		C	F	7	14.0	2.00	200	0.25	14.2
77-008	GREEN SUNFISH	I	T	C	S	11	22.0	3.14	300	0.38	13.6
77-009	BLUEGILL SUNFISH	I	P	C	S	7	14.0	2.00	400	0.51	28.5
77-011	LONGEAR SUNFISH	I	M	C	S	8	16.0	2.29	120	0.15	7.5
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.29	60	0.08	30.0
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.29	6	0.01	3.0
80-015	GREENSIDE DARTER	I	M	S	D	5	10.0	1.43	30	0.04	3.0
80-016	BANDED DARTER	I	I	S	D	1	2.0	0.29	2	0.00	1.0
80-017	VARIEGATE DARTER	I	I	S	D	1	2.0	0.29	4	0.01	2.0
80-019	BLUEBREAST DARTER	I	R	S	D	2	4.0	0.57	8	0.01	2.0

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: PAUL-L3 River: 02-001 Scioto River RM: 98.01 Date: 08/31/2020

Time Fished: 3520 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0

Location: dst. Wickett dam Lat: 39.58975 Long: -82.97153

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-020	TIPPECANOE DARTER	I	R	S	D	1	2.0	0.29	2	0.00	1.0
80-022	RAINBOW DARTER	I	M	S	D	1	2.0	0.29	2	0.00	1.0
85-001	FRESHWATER DRUM		P	M		1	2.0	0.29	2000	2.54	1000.0

No Species: 40 **Nat. Species:** 41 **Hybrids:** 2 **Total Counted:** 350 **Total Rel. Wt. :** 78894

IBI: 52.0 **MIwb:** 10.5

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: PAUL-L3 River: 02-001 Scioto River RM: 98.01 Date: 10/06/2020

Time Fished: 0 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0

Location: dst. Wickett dam Lat: 39.58975 Long: -82.97153

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		24	48.0	6.17	4920	9.94	102.5
40-003	BLACK BUFFALO	I		M	C	1	2.0	0.26	4400	8.89	2200.0
40-004	SMALLMOUTH BUFFALO	I		M	C	1	2.0	0.26	4800	9.70	2400.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	25	50.0	6.43	13340	26.95	266.8
40-023	SMALLMOUTH REDHORSE	I	M	S	R	12	24.0	3.08	13080	26.43	545.0
43-007	BIGEYE CHUB	I	I	S	N	10	20.0	2.57	144	0.29	7.2
43-008	STREAMLINE CHUB	I	R	S	N	2	4.0	0.51	40	0.08	10.0
43-009	GRAVEL CHUB	I	M	S	N	61	122.0	15.68	820	1.66	6.7
43-020	EMERALD SHINER	I		M	N	110	220.0	28.28	330	0.67	1.5
43-021	SILVER SHINER	I	I	S	N	2	4.0	0.51	12	0.02	3.0
43-027	RIVER SHINER	I		S	N	1	2.0	0.26	6	0.01	3.0
43-031	STEELCOLOR SHINER	I	P	M	N	11	22.0	2.83	120	0.24	5.4
43-032	SPOTFIN SHINER	I		M	N	7	14.0	1.80	50	0.10	3.5
43-034	SAND SHINER	I	M	M	N	3	6.0	0.77	8	0.02	1.3
43-035	MIMIC SHINER	I	I	M	N	2	4.0	0.51	4	0.01	1.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	11	22.0	2.83	40	0.08	1.8
43-044	CENTRAL STONEROLLER	H		N	N	23	46.0	5.91	600	1.21	13.0
43-063	CHANNEL SHINER	I	I	M	N	13	26.0	3.34	60	0.12	2.3
47-002	CHANNEL CATFISH			C	F	1	2.0	0.26	1400	2.83	700.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.26	2	0.00	1.0
77-004	SMALLMOUTH BASS	C	M	C	F	8	16.0	2.06	1120	2.26	70.0
77-005	SPOTTED BASS	C		C	F	14	28.0	3.60	1920	3.88	68.5
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	0.51	380	0.77	95.0
77-008	GREEN SUNFISH	I	T	C	S	3	6.0	0.77	200	0.40	33.3
77-009	BLUEGILL SUNFISH	I	P	C	S	2	4.0	0.51	100	0.20	25.0
77-011	LONGEAR SUNFISH	I	M	C	S	7	14.0	1.80	300	0.61	21.4
77-012	REDEAR SUNFISH	I		C	E	2	4.0	0.51	100	0.20	25.0
80-001	SAUGER	P		S	F	1	2.0	0.26	1000	2.02	500.0
80-004	DUSKY DARTER	I	M	S	D	3	6.0	0.77	40	0.08	6.6
80-007	SLENDERHEAD DARTER	I	R	S	D	1	2.0	0.26	8	0.02	4.0
80-011	LOGPERCH	I	M	S	D	3	6.0	0.77	60	0.12	10.0
80-015	GREENSIDE DARTER	I	M	S	D	3	6.0	0.77	20	0.04	3.3
80-016	BANDED DARTER	I	I	S	D	3	6.0	0.77	10	0.02	1.6
80-017	VARIEGATE DARTER	I	I	S	D	8	16.0	2.06	40	0.08	2.5
80-019	BLUEBREAST DARTER	I	R	S	D	2	4.0	0.51	10	0.02	2.5
80-020	TIPPECANOE DARTER	I	R	S	D	2	4.0	0.51	2	0.00	0.5
80-022	RAINBOW DARTER	I	M	S	D	4	8.0	1.03	12	0.02	1.5

No Species: 36 **Nat. Species:** 36 **Hybrids:** 0 **Total Counted:** 389 **Total Rel. Wt. :** 49498
IBI: 50.0 **MIwb:** 9.8

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR23 River: 02-001 Scioto River RM: 97.90 Date: 10/15/2020
 Time Fished: 4050 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: Dst. Wickett Dam Lat: 39.58988 Long: -82.97175

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		16	32.0	2.14	3400	4.00	106.2
40-004	SMALLMOUTH BUFFALO	I		M	C	1	2.0	0.13	4400	5.17	2200.0
40-006						2	4.0	0.27	2800	3.29	700.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	2.0	0.13	1400	1.65	700.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	28	56.0	3.75	12140	14.27	216.7
40-023	SMALLMOUTH REDHORSE	I	M	S	R	26	52.0	3.49	28180	33.12	541.9
43-007	BIGEYE CHUB	I	I	S	N	9	18.0	1.21	52	0.06	2.8
43-008	STREAMLINE CHUB	I	R	S	N	17	34.0	2.28	200	0.24	5.8
43-009	GRAVEL CHUB	I	M	S	N	124	248.0	16.62	1010	1.19	4.0
43-015	SUCKERMOUTH MINNOW	I		S	N	3	6.0	0.40	40	0.05	6.6
43-020	EMERALD SHINER	I		M	N	104	208.0	13.94	330	0.39	1.5
43-021	SILVER SHINER	I	I	S	N	9	18.0	1.21	100	0.12	5.5
43-025	STRIPED SHINER	I		S	N	3	6.0	0.40	14	0.02	2.3
43-031	STEELCOLOR SHINER	I	P	M	N	40	80.0	5.36	380	0.45	4.7
43-032	SPOTFIN SHINER	I		M	N	16	32.0	2.14	120	0.14	3.7
43-034	SAND SHINER	I	M	M	N	25	50.0	3.35	80	0.09	1.6
43-035	MIMIC SHINER	I	I	M	N	7	14.0	0.94	28	0.03	2.0
43-041	BULLHEAD MINNOW	O		C	N	34	68.0	4.56	176	0.21	2.5
43-043	BLUNTNOSE MINNOW	O	T	C	N	17	34.0	2.28	116	0.14	3.4
43-044	CENTRAL STONEROLLER	H		N	N	23	46.0	3.08	520	0.61	11.3
43-063	CHANNEL SHINER	I	I	M	N	31	62.0	4.16	120	0.14	1.9
47-002	CHANNEL CATFISH			C	F	4	8.0	0.54	12800	15.05	1600.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.13	1900	2.23	950.0
47-008	STONECAT MADTOM	I	I	C		2	4.0	0.27	100	0.12	25.0
77-004	SMALLMOUTH BASS	C	M	C	F	18	36.0	2.41	7940	9.33	220.5
77-005	SPOTTED BASS	C		C	F	42	84.0	5.63	3280	3.86	39.0
77-006	LARGEMOUTH BASS	C		C	F	7	14.0	0.94	480	0.56	34.2
77-008	GREEN SUNFISH	I	T	C	S	5	10.0	0.67	120	0.14	12.0
77-009	BLUEGILL SUNFISH	I	P	C	S	8	16.0	1.07	700	0.82	43.7
77-011	LONGEAR SUNFISH	I	M	C	S	8	16.0	1.07	300	0.35	18.7
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.13	20	0.02	10.0
80-001	SAUGER	P		S	F	1	2.0	0.13	800	0.94	400.0
80-004	DUSKY DARTER	I	M	S	D	7	14.0	0.94	40	0.05	2.8
80-007	SLENDERHEAD DARTER	I	R	S	D	2	4.0	0.27	6	0.01	1.5
80-011	LOGPERCH	I	M	S	D	14	28.0	1.88	500	0.59	17.8
80-015	GREENSIDE DARTER	I	M	S	D	22	44.0	2.95	240	0.28	5.4
80-016	BANDED DARTER	I	I	S	D	23	46.0	3.08	60	0.07	1.3
80-017	VARIEGATE DARTER	I	I	S	D	18	36.0	2.41	100	0.12	2.7
80-019	BLUEBREAST DARTER	I	R	S	D	5	10.0	0.67	40	0.05	4.0
80-020	TIPPECANOE DARTER	I	R	S	D	14	28.0	1.88	20	0.02	0.7

Appendix Table B-6. Midwest Biodiversity Institute Fish Species List

Site ID: SR23 River: 02-001 Scioto River RM: 97.90 Date: 10/15/2020
 Time Fished: 4050 Distance: 0.500 Drainge (sq mi): 3220.0 Depth: 0
 Location: Dst. Wickett Dam Lat: 39.58988 Long: -82.97175

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
80-022	RAINBOW DARTER	I	M	S	D	7	14.0	0.94	20	0.02	1.4
90-002	MOTTLED SCULPIN	I		C		1	2.0	0.13	6	0.01	3.0

No Species: 40 **Nat. Species:** 41 **Hybrids:** 1 **Total Counted:** 746 **Total Rel. Wt. :** 85078
IBI: 50.0 **MIwb:** 10.9

APPENDIX B: Olentangy River Mainstem Fish Assemblage Data
B-7: Olentangy River IBI Metrics, IBI Scores, and MIwb Scores
B-8: Olentangy River Fish Species Grand (all sites combined)
B-9: Fish Species Abundance Ust. Dodridge Dam by Year Interval 1987-2020
B-10: Fish Species Abundance Dst. Dodridge Dam by Year Interval 1987-2020
B-11: Olentangy River Fish Species by Site and Sample 2020

Appendix Table B-7. Boatable IBI scores and metrics for the Olentangy River mainstem sampled in 2020 by MBI.

Site ID	River Mile	Type	Drainage Date	Drainage area (sq mi)	Number of				Percent of Individuals						DELTA anomalies	Rel.No. minus tolerants /(1.0 km)	Modified		
					Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insectivores			IBI	lwb	Source
Olentangy River - (02400)																			
Year: 2020																			
OLN05	14.90	A	08/27/2020	482	30(5)	5(5)	5(3)	6(5)	37(3)	64(5)	9(5)	8(5)	5(3)	82(5)	0.0(5)	722(5)	54	10.2	MBI
OLN05	14.90	D	10/14/2020	482	23(5)	4(5)	4(3)	6(5)	2(0)	27(3)	44(1)	42(1)	3(3)	47(3)	0.0(5)	150(1)	40	7.7	MBI
OLN07	12.90	D	09/15/2020	489	25(5)	3(3)	4(3)	6(5)	20(0)	42(5)	21(3)	16(5)	4(3)	78(5)	0.0(5)	209(3)	50	8.5	MBI
OLN07	12.90	D	10/13/2020	489	19(3)	1(1)	2(1)	5(3)	19(0)	44(5)	31(1)	28(3)	6(5)	63(5)	0.0(5)	122(1) *	36	7.6	MBI
OLN08	12.30	D	09/15/2020	497	23(5)	5(5)	3(3)	3(3)	18(0)	35(3)	26(3)	20(3)	10(5)	68(5)	0.3(3)	216(3)	44	8.5	MBI
OLN08	12.30	D	10/13/2020	497	27(5)	4(5)	5(3)	7(5)	9(0)	26(3)	33(1)	31(3)	9(5)	58(5)	0.0(5)	221(3)	48	8.7	MBI
OLN09	8.40	P	09/03/2020	510	21(5)	5(5)	4(3)	4(5)	21(3)	40(3)	19(3)	17(3)	10(3)	64(5)	0.8(3)	426(5)	46	9.4	MBI
OLN10	7.10	P	09/03/2020	516	22(5)	2(3)	4(3)	5(5)	43(5)	56(5)	18(3)	18(3)	4(1)	73(5)	0.4(5)	426(5)	48	9.5	MBI
OLN10	7.10	D	10/14/2020	516	19(3)	3(3)	2(1)	4(3)	3(0)	19(3)	19(3)	17(5)	2(3)	79(5)	0.0(5)	274(3)	40	7.2	MBI
OLN11	5.65	P	09/03/2020	524	18(3)	7(5)	3(3)	1(1)	18(1)	20(1)	48(1)	14(5)	4(1)	80(5)	0.0(5)	170(1)	32	8.2	MBI
OLN12	4.30	P	09/14/2020	533	18(3)	6(5)	2(1)	1(1)	24(3)	27(3)	33(1)	23(3)	10(3)	66(5)	0.0(5)	236(3)	36	8.2	MBI
OLN01	3.95	P	09/14/2020	531	30(5)	5(5)	6(5)	7(5)	23(3)	31(3)	22(3)	19(3)	6(3)	66(5)	0.3(5)	604(5)	50	10.2	MBI
OLN02	2.00	D	09/15/2020	540	25(5)	3(3)	4(3)	7(5)	14(0)	61(5)	8(5)	7(5)	5(5)	80(5)	0.0(5)	425(3)	54	9.4	MBI
OLN02	2.00	D	10/14/2020	540	24(5)	2(3)	4(3)	7(5)	4(0)	62(5)	6(5)	6(5)	2(3)	91(5)	0.0(5)	300(3)	52	8.1	MBI
OLN03	1.80	P	09/18/2020	540	29(5)	3(3)	6(5)	8(5)	21(3)	49(3)	19(3)	18(3)	4(1)	71(5)	0.0(5)	598(5)	46	10.3	MBI
OLN04	0.20	D	09/04/2020	543	31(5)	3(3)	5(3)	9(5)	8(0)	67(5)	7(5)	6(5)	4(3)	83(5)	0.2(3)	534(3)	48	9.9	MBI
OLN04	0.20	D	10/13/2020	543	23(5)	2(3)	4(3)	7(5)	18(0)	44(5)	15(3)	13(5)	11(5)	63(5)	0.0(5)	290(3)	50	9.0	MBI

♦ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix B-8: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Olentangy River*

Years: 2020

Number of Samples: 17 Data Sources: 99 Data Types: A; D; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-043	BLUNTNOSE MINNOW	O	T	C	N	806	124.1	14.32	324	0.63	2.6
80-016	BANDED DARTER	I	I	S	D	471	72.5	8.37	96	0.19	1.3
40-015	NORTHERN HOG SUCKER	I	M	S	R	407	62.7	7.23	5225	10.11	83.3
43-034	SAND SHINER	I	M	M	N	403	62.1	7.16	124	0.24	2.0
40-010	GOLDEN REDHORSE	I	M	S	R	378	58.2	6.72	8108	15.69	139.2
43-032	SPOTFIN SHINER	I		M	N	327	50.4	5.81	206	0.40	4.1
80-022	RAINBOW DARTER	I	M	S	D	255	39.3	4.53	98	0.19	2.5
77-004	SMALLMOUTH BASS	C	M	C	F	241	37.1	4.28	3135	6.07	84.4
20-003	GIZZARD SHAD	O		M		238	36.7	4.23	819	1.59	22.3
43-044	CENTRAL STONEROLLER	H		N	N	225	34.7	4.00	456	0.88	13.1
43-021	SILVER SHINER	I	I	S	N	223	34.3	3.96	217	0.42	6.3
77-009	BLUEGILL SUNFISH	I	P	C	S	191	29.4	3.39	402	0.78	13.6
77-008	GREEN SUNFISH	I	T	C	S	187	28.8	3.32	391	0.76	13.5
80-019	BLUEBREAST DARTER	I	R	S	D	173	26.6	3.07	72	0.14	2.7
80-011	LOGPERCH	I	M	S	D	137	21.1	2.43	261	0.51	12.3
40-009	BLACK REDHORSE	I	I	S	R	116	17.9	2.06	4635	8.97	259.4
43-015	SUCKERMOUTH MINNOW	I		S	N	111	5.1	1.97	15	0.10	2.9
80-024	FANTAIL DARTER	I		C	D	111	5.1	1.97	8	0.06	1.7
80-015	GREENSIDE DARTER	I	M	S	D	89	13.7	1.58	75	0.15	5.5
77-011	LONGEAR SUNFISH	I	M	C	S	75	11.6	1.33	100	0.19	8.6
43-001	COMMON CARP	O	T	M	G	48	7.4	0.85	10846	20.98	1467.2
47-002	CHANNEL CATFISH			C	F	48	7.4	0.85	4707	9.11	636.8
47-008	STONECAT MADTOM	I	I	C		47	7.2	0.83	140	0.27	19.3
43-005	RIVER CHUB	I	I	N	N	31	1.4	0.55	14	0.09	9.8
80-014	JOHNNY DARTER	I		C	D	31	1.4	0.55	2	0.01	1.4
43-022	ROSYFACE SHINER	I	I	S	N	25	1.2	0.44	4	0.03	3.7
40-005	QUILLBACK CARPSUCKER	O		M	C	24	3.7	0.43	2171	4.20	587.5
70-001	BROOK SILVERSIDE	I	M	M		24	3.7	0.43	5	0.01	1.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	24	3.7	0.43	26	0.05	7.1
40-008	SILVER REDHORSE	I	M	S	R	20	3.1	0.36	4620	8.94	1500.0
77-006	LARGEMOUTH BASS	C		C	F	20	3.1	0.36	84	0.16	27.5
77-015	GREEN SF X BLUEGILL SF					19	2.9	0.34	89	0.17	30.5
47-012	BRINDLED MADTOM	I	I	C		16	2.5	0.28	6	0.01	2.8
77-003	ROCK BASS	C		C	S	16	0.7	0.28	34	0.22	46.5
80-026	SAUGER X WALLEYE	P			E	13	2.0	0.23	1077	2.08	538.0
43-003	GOLDEN SHINER	I	T	M	N	10	0.5	0.18	5	0.03	10.9
47-007	FLATHEAD CATFISH	P		C	F	9	1.4	0.16	528	1.02	381.1
77-002	BLACK CRAPPIE	I		C	S	7	1.1	0.12	49	0.10	45.7
40-013	RIVER REDHORSE	I	I	S	R	6	0.9	0.11	1917	3.71	2075.0
43-013	CREEK CHUB	G	T	N	N	4	0.2	0.07	1	0.01	10.0

Appendix B-8: Midwest Biodiversity Institute

Fish Species List - Grand Totals

Rivers: *Olentangy River*

Years: 2020

Number of Samples: 17 Data Sources: 99 Data Types: A; D; P

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
47-004	YELLOW BULLHEAD	I	T	C		4	0.6	0.07	20	0.04	33.2
74-001	WHITE BASS	P		M	F	4	0.6	0.07	57	0.11	93.7
74-005	Striped X White Bass				E	3	0.5	0.05	146	0.28	316.6
77-012	REDEAR SUNFISH	I		C	E	3	0.5	0.05	10	0.02	21.6
77-001	WHITE CRAPPIE	I		C	S	2	0.3	0.04	10	0.02	35.0
77-999	HYBRID X SUNFISH					2	0.1	0.04	2	0.02	30.0
43-027	RIVER SHINER	I		S	N	1	0.2	0.02	0	0.00	5.0
43-035	MIMIC SHINER	I	I	M	N	1	0.1	0.02	0	0.00	2.0
43-041	BULLHEAD MINNOW	O		C	N	1	0.1	0.02	0	0.00	3.0
77-013	PUMPKINSEED SUNFISH	I	P	C	S	1	0.2	0.02	18	0.04	120.0
80-001	SAUGER	P		S	F	1	0.1	0.02	32	0.21	700.0

No Species: 51 **Nat. Species:** 45 **Hybrids:** 4 **Total Counted:** 5629 **Total Rel. Wt. :** 51407

Appendix Table B-9. Olentangy River fish species upstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
20	003	GIZZARD SHAD	<i>Dorosoma cepedianum</i>		229	452.32	1.65	24
40	005	QUILLBACK CARPSUCKER	<i>Carpiodes cyprinus</i>		66	129.32	0.48	26
40	006	RIVER CARPSUCKER	<i>Carpiodes carpio carpio</i>		13	26	0.09	2
40	008	SILVER REDHORSE	<i>Moxostoma anisurum</i>	M	184	361.12	1.33	32
40	009	BLACK REDHORSE	<i>Moxostoma duquesnei</i>	I	417	812.98	3	33
40	010	GOLDEN REDHORSE	<i>Moxostoma erythrurum</i>	M	1086	2096.06	7.82	48
40	013	RIVER REDHORSE	<i>Moxostoma carinatum</i>	I	2	3	0.01	2
40	015	NORTHERN HOG SUCKER	<i>Hypentelium nigricans</i>	M	580	980.74	4.18	44
40	016	WHITE SUCKER	<i>Catostomus commersoni</i>	T	41	77.14	0.3	12
40	023	SMALLMOUTH REDHORSE	<i>Moxostoma breviceps</i>	M	1	2	0.01	1
43	001	COMMON CARP	<i>Cyprinus carpio</i>	T	343	653.91	2.47	48
43	002	GOLDFISH	<i>Carassius auratus</i>	T	1	2	0.01	1
43	003	GOLDEN SHINER	<i>Notemigonus crysoleucas</i>	T	46	92	0.33	9
43	013	CREEK CHUB	<i>Semotilus atromaculatus</i>	T	5	5.91	0.04	5
43	021	SILVER SHINER	<i>Notropis photogenis</i>	I	323	568.85	2.33	30
43	022	ROSYFACE SHINER	<i>Notropis rubellus</i>	I	8	8	0.06	2
43	024	SCARLET SHINER	<i>Lythrurus fasciolaris</i>	M	2	2	0.01	1
43	025	STRIPED SHINER	<i>Luxilus chrysocephalus</i>		1	0.91	0.01	1
43	027	RIVER SHINER	<i>Notropis blennius</i>		1	2	0.01	1
43	031	STEELCOLOR SHINER	<i>Cyprinella whipplei</i>	P	7	14.44	0.05	3
43	032	SPOTFIN SHINER	<i>Cyprinella spiloptera</i>		639	1109.12	4.6	48
43	034	SAND SHINER	<i>Notropis stramineus</i>	M	896	1704.04	6.45	34
43	035	MIMIC SHINER	<i>Notropis volucellus</i>	I	1	2.22	0.01	1
43	042	FATHEAD MINNOW	<i>Pimephales promelas</i>	T	2	2.16	0.01	2
43	043	BLUNTNOSE MINNOW	<i>Pimephales notatus</i>	T	1183	2199.06	8.52	51
43	044	CENTRAL STONEROLLER	<i>Campostoma anomalum</i>		571	850.86	4.11	34
43	045	COMMON CARP X GOLDFISH	HYBRID	T	3	5.46	0.02	3
47	002	CHANNEL CATFISH	<i>Ictalurus punctatus</i>		52	96.32	0.37	22
47	004	YELLOW BULLHEAD	<i>Ameiurus natalis</i>	T	90	137.39	0.65	34
47	006	BLACK BULLHEAD	<i>Ameiurus melas</i>	P	2	4	0.01	2

Appendix Table B-9 . Olentangy River fish species upstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
47	007	FLATHEAD CATFISH	<i>Pylodictis olivaris</i>		5	7.91	0.04	5
47	008	STONECAT MADTOM	<i>Noturus flavus</i>	I	62	92.16	0.45	19
47	012	BRINDLED MADTOM	<i>Noturus miurus</i>	I	25	25.95	0.18	8
54	002	BLACKSTRIPED TOPMINNOW	<i>Fundulus notatus</i>		2	4	0.01	1
70	001	BROOK SILVERSIDE	<i>Labidesthes sicculus</i>	M	64	115.77	0.46	14
74	001	WHITE BASS	<i>Morone chrysops</i>		20	39.5	0.14	12
74	005	Striped X White Bass	HYBRID		1	2	0.01	1
77	001	WHITE CRAPPIE	<i>Pomoxis annularis</i>		54	107	0.39	18
77	002	BLACK CRAPPIE	<i>Pomoxis nigromaculatus</i>		106	185.12	0.76	28
77	003	ROCK BASS	<i>Ambloplites rupestris</i>		956	1629.23	6.88	50
77	004	SMALLMOUTH BASS	<i>Micropterus dolomieu</i>	M	1215	2189.2	8.75	53
77	006	LARGEMOUTH BASS	<i>Micropterus salmoides</i>		190	352.84	1.37	37
77	007	WARMOUTH SUNFISH	<i>Lepomis gulosus</i>		1	0.91	0.01	1
77	008	GREEN SUNFISH	<i>Lepomis cyanellus</i>	T	888	1625.02	6.39	49
77	009	BLUEGILL SUNFISH	<i>Lepomis macrochirus</i>	P	786	1229.69	5.66	50
77	010	ORANGESPOTTED SUNFISH	<i>Lepomis humilis</i>		81	123.52	0.58	20
77	011	LONGEAR SUNFISH	<i>Lepomis megalotis</i>	M	1270	2443.42	9.15	43
77	012	REDEAR SUNFISH	<i>Lepomis microlophus</i>		3	4.25	0.02	3
77	013	PUMPKINSEED SUNFISH	<i>Lepomis gibbosus</i>	P	21	25.5	0.15	5
77	015	GREEN SF X BLUEGILL SF	HYBRID		40	83.25	0.29	15
77	016	GREEN SF X PUMPKINSEED	HYBRID		1	1	0.01	1
77	019	GREEN SF X ORANGESPOT SF	HYBRID		1	1.96	0.01	1
77	021	GREEN SF X LONGEAR SF	HYBRID		16	31.67	0.12	4
77	022	ORANGESPOT SF X PUMPKSEED	HYBRID		1	1.96	0.01	1
77	998	GREEN SF X HYBRID	HYBRID		57	96.5	0.41	17
77	999	HYBRID X SUNFISH	HYBRID		23	42.91	0.17	8
80	011	LOGPERCH	<i>Percina caprodes</i>	M	136	225.15	0.98	26
80	014	JOHNNY DARTER	<i>Etheostoma nigrum</i>		38	51.23	0.27	13
80	015	GREENSIDE DARTER	<i>Etheostoma blennioides</i>	M	199	284.73	1.43	31
80	016	BANDED DARTER	<i>Etheostoma zonale</i>	I	435	700.42	3.13	32

Appendix Table B-9 . Olentangy River fish species upstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
80	019	BLUEBREAST DARTER	<i>Etheostoma camurum</i>	R	71	108.73	0.51	16
80	022	RAINBOW DARTER	<i>Etheostoma caeruleum</i>	M	240	336.5	1.73	28
80	023	ORANGETHROAT DARTER	<i>Etheostoma spectabile</i>		2	2	0.01	1
80	024	FANTAIL DARTER	<i>Etheostoma flabellare</i>		64	76.23	0.46	14
80	026	SAUGER X WALLEYE	<i>HYBRID</i>		17	34.37	0.12	9
				<i>Total Counted:</i>	13,886			
				<i>Total Relative Number:</i>	24,683			
				<i>Total Native Species:</i>	53			
				<i>Non-Native Species:</i>	2			
				<i>Hybrids:</i>	10			
				<i>Species Uniquely Ust. Dam</i>	3			

Appendix Table B-10 . Olentangy River fish species downstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
20	003	GIZZARD SHAD	<i>Dorosoma cepedianum</i>		2117	4300.54	8.82	57
40	005	QUILLBACK CARPSUCKER	<i>Carpionodes cyprinus</i>		110	220.46	0.46	30
40	006	RIVER CARPSUCKER	<i>Carpionodes carpio carpio</i>		22	43.69	0.09	9
40	007	HIGHFIN CARPSUCKER	<i>Carpionodes velifer</i>		1	2	0	1
40	008	SILVER REDHORSE	<i>Moxostoma anisurum</i>	M	75	148.28	0.31	29
40	009	BLACK REDHORSE	<i>Moxostoma duquesnei</i>	I	749	1475.71	3.12	52
40	010	GOLDEN REDHORSE	<i>Moxostoma erythrurum</i>	M	1084	2209.79	4.52	64
40	013	RIVER REDHORSE	<i>Moxostoma carinatum</i>	I	117	233	0.49	16
40	015	NORTHERN HOG SUCKER	<i>Hypentelium nigricans</i>	M	739	1266.02	3.08	43
40	016	WHITE SUCKER	<i>Catostomus commersoni</i>	T	35	71.97	0.15	16
40	018	SPOTTED SUCKER	<i>Minytrema melanops</i>		8	16.08	0.03	4
40	023	SMALLMOUTH REDHORSE	<i>Moxostoma breviceps</i>	M	3	6	0.01	3
43	001	COMMON CARP	<i>Cyprinus carpio</i>	T	752	1476.16	3.13	70
43	002	GOLDFISH	<i>Carassius auratus</i>	T	6	11.83	0.03	6
43	003	GOLDEN SHINER	<i>Notemigonus crysoleucas</i>	T	467	952.51	1.95	40
43	004	HORNYHEAD CHUB	<i>Nocomis biguttatus</i>	I	1	2	0	1
43	005	RIVER CHUB	<i>Nocomis micropogon</i>	I	588	921.31	2.45	33
43	013	CREEK CHUB	<i>Semotilus atromaculatus</i>	T	171	339.5	0.71	7
43	015	SUCKERMOUTH MINNOW	<i>Phenacobius mirabilis</i>		142	164.5	0.59	7
43	020	EMERALD SHINER	<i>Notropis atherinoides</i>		2	4	0.01	1
43	021	SILVER SHINER	<i>Notropis photogenis</i>	I	218	359.6	0.91	21
43	022	ROSYFACE SHINER	<i>Notropis rubellus</i>	I	90	151	0.37	10
43	025	STRIPED SHINER	<i>Luxilus chrysocephalus</i>		48	100.25	0.2	10
43	031	STEELCOLOR SHINER	<i>Cyprinella whipplei</i>	P	5	10	0.02	3
43	032	SPOTFIN SHINER	<i>Cyprinella spiloptera</i>		802	1511.86	3.34	50
43	034	SAND SHINER	<i>Notropis stramineus</i>	M	671	1239.12	2.8	31
43	035	MIMIC SHINER	<i>Notropis volucellus</i>	I	1	1	0	1
43	041	BULLHEAD MINNOW	<i>Pimephales vigilax</i>		7	13	0.03	2
43	042	FATHEAD MINNOW	<i>Pimephales promelas</i>	T	39	77.5	0.16	4
43	043	BLUNTNOSE MINNOW	<i>Pimephales notatus</i>	T	2184	4394.37	9.1	60
43	044	CENTRAL STONEROLLER	<i>Campostoma anomalum</i>		533	847.48	2.22	38
43	045	COMMON CARP X GOLDFISH	HYBRID	T	9	22	0.04	3

Appendix Table B-10 . Olentangy River fish species downstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
43	047	GRASS CARP	<i>Ctenopharyngodon idella</i>		1	2	0	1
47	002	CHANNEL CATFISH	<i>Ictalurus punctatus</i>		134	236.42	0.56	30
47	004	YELLOW BULLHEAD	<i>Ameiurus natalis</i>	T	51	96.55	0.21	29
47	005	BROWN BULLHEAD	<i>Ameiurus nebulosus</i>	T	5	12	0.02	2
47	006	BLACK BULLHEAD	<i>Ameiurus melas</i>	P	2	4.5	0.01	2
47	007	FLATHEAD CATFISH	<i>Pylodictis olivaris</i>		15	24.41	0.06	11
47	008	STONECAT MADTOM	<i>Noturus flavus</i>	I	25	32.82	0.1	9
47	012	BRINDLED MADTOM	<i>Noturus miurus</i>	I	5	7.91	0.02	5
70	001	BROOK SILVERSIDE	<i>Labidesthes sicculus</i>	M	97	198.45	0.4	22
74	001	WHITE BASS	<i>Morone chrysops</i>		15	28.83	0.06	11
74	005	Striped X White Bass	HYBRID		2	4	0.01	1
77	001	WHITE CRAPPIE	<i>Pomoxis annularis</i>		86	173.36	0.36	20
77	002	BLACK CRAPPIE	<i>Pomoxis nigromaculatus</i>		244	495.21	1.02	39
77	003	ROCK BASS	<i>Ambloplites rupestris</i>		496	993.11	2.07	52
77	004	SMALLMOUTH BASS	<i>Micropterus dolomieu</i>	M	1335	2552.01	5.56	61
77	005	SPOTTED BASS	<i>Micropterus punctulatus</i>		7	14	0.03	1
77	006	LARGEMOUTH BASS	<i>Micropterus salmoides</i>		766	1563.58	3.19	62
77	007	WARMOUTH SUNFISH	<i>Lepomis gulosus</i>		1	2	0	1
77	008	GREEN SUNFISH	<i>Lepomis cyanellus</i>	T	1150	2300.32	4.79	69
77	009	BLUEGILL SUNFISH	<i>Lepomis macrochirus</i>	P	2193	4419.71	9.14	69
77	010	ORANGESPOTTED SUNFISH	<i>Lepomis humilis</i>		356	746.7	1.48	44
77	011	LONGEAR SUNFISH	<i>Lepomis megalotis</i>	M	2053	4192.08	8.55	61
77	012	REDEAR SUNFISH	<i>Lepomis microlophus</i>		13	26	0.05	6
77	013	PUMPKINSEED SUNFISH	<i>Lepomis gibbosus</i>	P	157	315.13	0.65	23
77	014	BLUEGILL X PUMPKINSEED	HYBRID		6	12	0.03	3
77	015	GREEN SF X BLUEGILL SF	HYBRID		212	424.96	0.88	23
77	017	LONGEAR SF X BLUEGILL SF	HYBRID		6	11.96	0.03	5
77	018	BLUEGILL X ORANGESPOT	HYBRID		6	12	0.03	2
77	019	GREEN SF X ORANGESPOT SF	HYBRID		1	2	0	1
77	020	PUMPKINSEED X LONGEAR SF	HYBRID		2	3.96	0.01	2
77	021	GREEN SF X LONGEAR SF	HYBRID		11	22	0.05	5
77	022	ORANGESPOT SF X PUMPKSEED	HYBRID		3	6	0.01	1

Appendix Table B-10 . Olentangy River fish species downstream from the Dodridge Street dam by year range intervals 1987-2020.

Family Code	Species Code	Species Name	Latin Name	Tolerance	Raw Count	Total. Rel. No.	Pct. by Number	Samples Collected
77	023	LONGEAR X ORANGESPOT	<i>HYBRID</i>		5	10	0.02	2
77	998	GREEN SF X HYBRID	<i>HYBRID</i>		342	687.41	1.42	24
77	999	HYBRID X SUNFISH	<i>HYBRID</i>		316	630.96	1.32	18
80	001	SAUGER	<i>Sander canadensis</i>		1	1	0	1
80	011	LOGPERCH	<i>Percina caprodes</i>	M	390	645.31	1.62	33
80	014	JOHNNY DARTER	<i>Etheostoma nigrum</i>		108	161.73	0.45	13
80	015	GREENSIDE DARTER	<i>Etheostoma blennioides</i>	M	186	289.35	0.77	25
80	016	BANDED DARTER	<i>Etheostoma zonale</i>	I	646	837.39	2.69	22
80	019	BLUEBREAST DARTER	<i>Etheostoma camurum</i>	R	145	179.5	0.6	9
80	022	RAINBOW DARTER	<i>Etheostoma caeruleum</i>	M	336	442.63	1.4	17
80	023	ORANGETHROAT DARTER	<i>Etheostoma spectabile</i>		1	0.91	0	1
80	024	FANTAIL DARTER	<i>Etheostoma flabellare</i>		162	218.91	0.67	15
80	026	SAUGER X WALLEYE	<i>HYBRID</i>		113	234.53	0.47	37
				<i>Total Counted:</i>	24,003			
				<i>Total Relative Number:</i>	45,868			
				<i>Total Native Species:</i>	60			
				<i>Non-Native Species:</i>	3			
				<i>Hybrids:</i>	14			
				<i>Species Uniquely Dst. Dam</i>	10			

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN05 River: 02-400 Olentangy River RM: 14.90 Date: 08/27/2020

Time Fished: 3098 Distance: 0.500 Drainge (sq mi): 482.0 Depth: 0

Location: dst. Powell Rd. in Highbanks Metropark Lat: 40.15500 Long: -83.04530

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		3	6.0	0.75	1040	0.68	173.3
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.50	4200	2.75	1050.0
40-008	SILVER REDHORSE	I	M	S	R	6	12.0	1.50	28400	18.57	2366.6
40-009	BLACK REDHORSE	I	I	S	R	11	22.0	2.74	8660	5.66	393.6
40-010	GOLDEN REDHORSE	I	M	S	R	75	150.0	18.70	53440	34.95	356.2
40-015	NORTHERN HOG SUCKER	I	M	S	R	54	108.0	13.47	13300	8.70	123.1
43-001	COMMON CARP	O	T	M	G	8	16.0	2.00	31600	20.67	1975.0
43-021	SILVER SHINER	I	I	S	N	42	84.0	10.47	820	0.54	9.7
43-027	RIVER SHINER	I		S	N	1	2.0	0.25	10	0.01	5.0
43-032	SPOTFIN SHINER	I		M	N	23	46.0	5.74	180	0.12	3.9
43-034	SAND SHINER	I	M	M	N	7	14.0	1.75	20	0.01	1.4
43-043	BLUNTNOSE MINNOW	O	T	C	N	20	40.0	4.99	120	0.08	3.0
43-044	CENTRAL STONEROLLER	H		N	N	16	32.0	3.99	500	0.33	15.6
47-002	CHANNEL CATFISH			C	F	3	6.0	0.75	5000	3.27	833.3
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.25	600	0.39	300.0
47-008	STONECAT MADTOM	I	I	C		6	12.0	1.50	180	0.12	15.0
47-012	BRINDLED MADTOM	I	I	C		1	2.0	0.25	10	0.01	5.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.25	2	0.00	1.0
77-003	ROCK BASS	C		C	S	1	2.0	0.25	200	0.13	100.0
77-004	SMALLMOUTH BASS	C	M	C	F	18	36.0	4.49	2900	1.90	80.5
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.25	160	0.10	80.0
77-008	GREEN SUNFISH	I	T	C	S	9	18.0	2.24	180	0.12	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	7	14.0	1.75	240	0.16	17.1
77-010	ORANGESPOTTED SUNFISH	I		C	S	11	22.0	2.74	140	0.09	6.3
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.25	40	0.03	20.0
77-013	PUMPKINSEED SUNFISH	I	P	C	S	1	2.0	0.25	240	0.16	120.0
77-015	GREEN SF X BLUEGILL SF					3	6.0	0.75	240	0.16	40.0
80-011	LOGPERCH	I	M	S	D	2	4.0	0.50	100	0.07	25.0
80-014	JOHNNY DARTER	I		C	D	2	4.0	0.50	4	0.00	1.0
80-015	GREENSIDE DARTER	I	M	S	D	7	14.0	1.75	100	0.07	7.1
80-016	BANDED DARTER	I	I	S	D	24	48.0	5.99	80	0.05	1.6
80-019	BLUEBREAST DARTER	I	R	S	D	28	56.0	6.98	180	0.12	3.2
80-022	RAINBOW DARTER	I	M	S	D	3	6.0	0.75	12	0.01	2.0
80-024	FANTAIL DARTER	I		C	D	3	6.0	0.75	6	0.00	1.0

No Species: 32 **Nat. Species:** 31 **Hybrids:** 1 **Total Counted:** 401 **Total Rel. Wt. :** 152904

IBI: 54.0 **MIwb:** 10.2

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN05 River: 02-400 Olentangy River RM: 14.90 Date: 10/14/2020

Time Fished: 3401 Distance: 0.300 Drainge (sq mi): 482.0 Depth: 0

Location: dst. Powell Rd. in Highbanks Metropark Lat: 40.15500 Long: -83.04530

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		1	1.0	0.37	90	1.39	90.0
40-005	QUILLBACK CARPSUCKER	O		M	C	1	1.0	0.37	1400	21.61	1400.0
40-009	BLACK REDHORSE	I	I	S	R	1	1.0	0.37	900	13.89	900.0
40-010	GOLDEN REDHORSE	I	M	S	R	1	1.0	0.37	1100	16.98	1100.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	4	4.0	1.49	1100	16.98	275.0
43-021	SILVER SHINER	I	I	S	N	4	4.0	1.49	40	0.62	10.0
43-032	SPOTFIN SHINER	I		M	N	6	6.0	2.23	30	0.46	5.0
43-034	SAND SHINER	I	M	M	N	13	13.0	4.83	40	0.62	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	111	111.0	41.26	240	3.70	2.1
43-044	CENTRAL STONEROLLER	H		N	N	22	22.0	8.18	330	5.09	15.0
47-008	STONECAT MADTOM	I	I	C		10	10.0	3.72	40	0.62	4.0
47-012	BRINDLED MADTOM	I	I	C		2	2.0	0.74	6	0.09	3.0
77-003	ROCK BASS	C		C	S	2	2.0	0.74	30	0.46	15.0
77-004	SMALLMOUTH BASS	C	M	C	F	7	7.0	2.60	810	12.50	115.7
77-008	GREEN SUNFISH	I	T	C	S	7	7.0	2.60	70	1.08	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	4	4.0	1.49	50	0.77	12.5
77-011	LONGEAR SUNFISH	I	M	C	S	3	3.0	1.12	20	0.31	6.6
77-012	REDEAR SUNFISH	I		C	E	1	1.0	0.37	15	0.23	15.0
80-011	LOGPERCH	I	M	S	D	1	1.0	0.37	6	0.09	6.0
80-014	JOHNNY DARTER	I		C	D	1	1.0	0.37	2	0.03	2.0
80-015	GREENSIDE DARTER	I	M	S	D	3	3.0	1.12	30	0.46	10.0
80-016	BANDED DARTER	I	I	S	D	38	38.0	14.13	70	1.08	1.8
80-019	BLUEBREAST DARTER	I	R	S	D	5	5.0	1.86	20	0.31	4.0
80-022	RAINBOW DARTER	I	M	S	D	15	15.0	5.58	30	0.46	2.0
80-024	FANTAIL DARTER	I		C	D	6	6.0	2.23	10	0.15	1.6

No Species: 24 **Nat. Species:** 24 **Hybrids:** 0 **Total Counted:** 269 **Total Rel. Wt. :** 6479

IBI: 40.0 **MIwb:** 7.7

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN07 River: 02-400 Olentangy River RM: 12.90 Date: 09/15/2020

Time Fished: 3401 Distance: 0.300 Drainge (sq mi): 489.0 Depth: 0

Location: Dst. Olentangy ECC Lat: 40.13042 Long: -83.03453

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-008	SILVER REDHORSE	I	M	S	R	2	2.0	0.76	4000	19.69	2000.0
40-009	BLACK REDHORSE	I	I	S	R	4	4.0	1.52	2600	12.80	650.0
40-010	GOLDEN REDHORSE	I	M	S	R	10	10.0	3.80	4400	21.66	440.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	36	36.0	13.69	6730	33.13	186.9
43-013	CREEK CHUB	G	T	N	N	1	1.0	0.38	30	0.15	30.0
43-021	SILVER SHINER	I	I	S	N	24	24.0	9.13	200	0.98	8.3
43-032	SPOTFIN SHINER	I		M	N	44	44.0	16.73	180	0.89	4.0
43-034	SAND SHINER	I	M	M	N	15	15.0	5.70	30	0.15	2.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	43	43.0	16.35	100	0.49	2.3
43-044	CENTRAL STONEROLLER	H		N	N	3	3.0	1.14	30	0.15	10.0
47-004	YELLOW BULLHEAD	I	T	C		1	1.0	0.38	10	0.05	10.0
47-008	STONECAT MADTOM	I	I	C		1	1.0	0.38	120	0.59	120.0
47-012	BRINDLED MADTOM	I	I	C		2	2.0	0.76	3	0.01	1.5
77-003	ROCK BASS	C		C	S	2	2.0	0.76	3	0.01	1.5
77-004	SMALLMOUTH BASS	C	M	C	F	7	7.0	2.66	1330	6.55	190.0
77-006	LARGEMOUTH BASS	C		C	F	1	1.0	0.38	10	0.05	10.0
77-008	GREEN SUNFISH	I	T	C	S	9	9.0	3.42	80	0.39	8.8
77-009	BLUEGILL SUNFISH	I	P	C	S	18	18.0	6.84	280	1.38	15.5
77-015	GREEN SF X BLUEGILL SF					1	1.0	0.38	20	0.10	20.0
80-011	LOGPERCH	I	M	S	D	2	2.0	0.76	30	0.15	15.0
80-014	JOHNNY DARTER	I		C	D	1	1.0	0.38	1	0.00	1.0
80-015	GREENSIDE DARTER	I	M	S	D	4	4.0	1.52	50	0.25	12.5
80-016	BANDED DARTER	I	I	S	D	18	18.0	6.84	50	0.25	2.7
80-019	BLUEBREAST DARTER	I	R	S	D	1	1.0	0.38	3	0.01	3.0
80-022	RAINBOW DARTER	I	M	S	D	10	10.0	3.80	20	0.10	2.0
80-024	FANTAIL DARTER	I		C	D	3	3.0	1.14	5	0.02	1.6

No Species: 25 **Nat. Species:** 25 **Hybrids:** 1 **Total Counted:** 263 **Total Rel. Wt. :** 20315
IBI: 50.0 **MIwb:** 8.5

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN07 River: 02-400 Olentangy River RM: 12.90 Date: 10/13/2020

Time Fished: 3176 Distance: 0.300 Drainge (sq mi): 489.0 Depth: 0

Location: Dst. Olentangy ECC Lat: 40.13042 Long: -83.03453

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-010	GOLDEN REDHORSE	I	M	S	R	12	12.0	6.78	4690	28.56	390.8
40-015	NORTHERN HOG SUCKER	I	M	S	R	21	21.0	11.86	4920	29.97	234.2
43-001	COMMON CARP	O	T	M	G	1	1.0	0.56	4500	27.41	4500.0
43-013	CREEK CHUB	G	T	N	N	1	1.0	0.56	4	0.02	4.0
43-021	SILVER SHINER	I	I	S	N	4	4.0	2.26	10	0.06	2.5
43-022	ROSYFACE SHINER	I	I	S	N	2	2.0	1.13	8	0.05	4.0
43-032	SPOTFIN SHINER	I		M	N	7	7.0	3.95	20	0.12	2.8
43-034	SAND SHINER	I	M	M	N	7	7.0	3.95	10	0.06	1.4
43-043	BLUNTNOSE MINNOW	O	T	C	N	49	49.0	27.68	90	0.55	1.8
43-044	CENTRAL STONEROLLER	H		N	N	3	3.0	1.69	10	0.06	3.3
47-008	STONECAT MADTOM	I	I	C		2	2.0	1.13	6	0.04	3.0
47-012	BRINDLED MADTOM	I	I	C		4	4.0	2.26	6	0.04	1.5
77-004	SMALLMOUTH BASS	C	M	C	F	8	8.0	4.52	1790	10.90	223.7
77-006	LARGEMOUTH BASS	C		C	F	3	3.0	1.69	15	0.09	5.0
77-008	GREEN SUNFISH	I	T	C	S	4	4.0	2.26	100	0.61	25.0
80-011	LOGPERCH	I	M	S	D	9	9.0	5.08	180	1.10	20.0
80-014	JOHNNY DARTER	I		C	D	4	4.0	2.26	10	0.06	2.5
80-016	BANDED DARTER	I	I	S	D	24	24.0	13.56	30	0.18	1.2
80-022	RAINBOW DARTER	I	M	S	D	5	5.0	2.82	10	0.06	2.0
80-024	FANTAIL DARTER	I		C	D	7	7.0	3.95	10	0.06	1.4

No Species: 20 **Nat. Species:** 19 **Hybrids:** 0 **Total Counted:** 177 **Total Rel. Wt. :** 16419
IBI: 36.0 **MIwb:** 7.6

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN08 River: 02-400 Olentangy River RM: 12.30 Date: 09/15/2020

Time Fished: 2601 Distance: 0.300 Drainge (sq mi): 490.0 Depth: 0

Location: Olentangy R. @Worthington Ust. I-270 N. Lat: 40.12185 Long: -83.03221

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		1	1.0	0.34	3	0.02	3.0
40-009	BLACK REDHORSE	I	I	S	R	14	14.0	4.76	7500	38.66	535.7
40-010	GOLDEN REDHORSE	I	M	S	R	7	7.0	2.38	1500	7.73	214.2
40-015	NORTHERN HOG SUCKER	I	M	S	R	33	33.0	11.22	4540	23.40	137.5
43-001	COMMON CARP	O	T	M	G	1	1.0	0.34	130	0.67	130.0
43-021	SILVER SHINER	I	I	S	N	29	29.0	9.86	150	0.77	5.1
43-032	SPOTFIN SHINER	I		M	N	28	28.0	9.52	120	0.62	4.2
43-034	SAND SHINER	I	M	M	N	10	10.0	3.40	10	0.05	1.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	57	57.0	19.39	150	0.77	2.6
43-044	CENTRAL STONEROLLER	H		N	N	2	2.0	0.68	8	0.04	4.0
47-002	CHANNEL CATFISH			C	F	1	1.0	0.34	1000	5.15	1000.0
70-001	BROOK SILVERSIDE	I	M	M		13	13.0	4.42	20	0.10	1.5
77-003	ROCK BASS	C		C	S	2	2.0	0.68	180	0.93	90.0
77-004	SMALLMOUTH BASS	C	M	C	F	24	24.0	8.16	3530	18.19	147.0
77-006	LARGEMOUTH BASS	C		C	F	4	4.0	1.36	30	0.15	7.5
77-008	GREEN SUNFISH	I	T	C	S	19	19.0	6.46	220	1.13	11.5
77-009	BLUEGILL SUNFISH	I	P	C	S	15	15.0	5.10	200	1.03	13.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	1	1.0	0.34	5	0.03	5.0
77-011	LONGEAR SUNFISH	I	M	C	S	2	2.0	0.68	10	0.05	5.0
77-015	GREEN SF X BLUEGILL SF					2	2.0	0.68	40	0.21	20.0
80-011	LOGPERCH	I	M	S	D	2	2.0	0.68	10	0.05	5.0
80-014	JOHNNY DARTER	I		C	D	1	1.0	0.34	1	0.01	1.0
80-015	GREENSIDE DARTER	I	M	S	D	1	1.0	0.34	3	0.02	3.0
80-016	BANDED DARTER	I	I	S	D	11	11.0	3.74	11	0.06	1.0
80-022	RAINBOW DARTER	I	M	S	D	7	7.0	2.38	20	0.10	2.8
80-024	FANTAIL DARTER	I		C	D	7	7.0	2.38	11	0.06	1.5

No Species: 24 **Nat. Species:** 24 **Hybrids:** 1 **Total Counted:** 294 **Total Rel. Wt. :** 19402
IBI: 44.0 **MIwb:** 8.5

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN08 River: 02-400 Olentangy River RM: 12.30 Date: 10/13/2020

Time Fished: 3739 Distance: 0.300 Drainge (sq mi): 490.0 Depth: 0

Location: Olentangy R. @Worthington Ust. I-270 N. Lat: 40.12185 Long: -83.03221

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-005	QUILLBACK CARPSUCKER	O		M	C	3	3.0	0.91	3400	13.23	1133.3
40-009	BLACK REDHORSE	I	I	S	R	7	7.0	2.11	3600	14.01	514.2
40-010	GOLDEN REDHORSE	I	M	S	R	12	12.0	3.63	6250	24.32	520.8
40-013	RIVER REDHORSE	I	I	S	R	1	1.0	0.30	1350	5.25	1350.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	10	10.0	3.02	2800	10.89	280.0
43-001	COMMON CARP	O	T	M	G	1	1.0	0.30	4400	17.12	4400.0
43-021	SILVER SHINER	I	I	S	N	7	7.0	2.11	60	0.23	8.5
43-022	ROSYFACE SHINER	I	I	S	N	6	6.0	1.81	20	0.08	3.3
43-032	SPOTFIN SHINER	I		M	N	12	12.0	3.63	40	0.16	3.3
43-034	SAND SHINER	I	M	M	N	65	65.0	19.64	110	0.43	1.6
43-043	BLUNTNOSE MINNOW	O	T	C	N	98	98.0	29.61	220	0.86	2.2
43-044	CENTRAL STONEROLLER	H		N	N	6	6.0	1.81	30	0.12	5.0
47-002	CHANNEL CATFISH			C	F	1	1.0	0.30	10	0.04	10.0
47-008	STONECAT MADTOM	I	I	C		1	1.0	0.30	10	0.04	10.0
70-001	BROOK SILVERSIDE	I	M	M		1	1.0	0.30	3	0.01	3.0
77-003	ROCK BASS	C		C	S	1	1.0	0.30	2	0.01	2.0
77-004	SMALLMOUTH BASS	C	M	C	F	25	25.0	7.55	2690	10.47	107.6
77-006	LARGEMOUTH BASS	C		C	F	3	3.0	0.91	20	0.08	6.6
77-008	GREEN SUNFISH	I	T	C	S	11	11.0	3.32	150	0.58	13.6
77-009	BLUEGILL SUNFISH	I	P	C	S	8	8.0	2.42	15	0.06	1.8
77-010	ORANGESPOTTED SUNFISH	I		C	S	1	1.0	0.30	6	0.02	6.0
77-015	GREEN SF X BLUEGILL SF					1	1.0	0.30	50	0.19	50.0
80-011	LOGPERCH	I	M	S	D	19	19.0	5.74	380	1.48	20.0
80-014	JOHNNY DARTER	I		C	D	4	4.0	1.21	8	0.03	2.0
80-015	GREENSIDE DARTER	I	M	S	D	3	3.0	0.91	20	0.08	6.6
80-016	BANDED DARTER	I	I	S	D	11	11.0	3.32	20	0.08	1.8
80-019	BLUEBREAST DARTER	I	R	S	D	4	4.0	1.21	10	0.04	2.5
80-022	RAINBOW DARTER	I	M	S	D	6	6.0	1.81	20	0.08	3.3
80-024	FANTAIL DARTER	I		C	D	3	3.0	0.91	6	0.02	2.0

No Species: 28 **Nat. Species:** 27 **Hybrids:** 1 **Total Counted:** 331 **Total Rel. Wt. :** 25700

IBI: 48.0 **MIwb:** 8.7

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN09 River: 02-400 Olentangy River RM: 8.40 Date: 09/03/2020

Time Fished: 2836 Distance: 0.500 Drainge (sq mi): 510.0 Depth: 0

Location: dst. Antrim Park Lat: 40.07421 Long: -83.03501

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		3	6.0	1.13	1400	2.05	233.3
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.75	3800	5.57	950.0
40-009	BLACK REDHORSE	I	I	S	R	12	24.0	4.51	9200	13.49	383.3
40-010	GOLDEN REDHORSE	I	M	S	R	22	44.0	8.27	11700	17.16	265.9
40-015	NORTHERN HOG SUCKER	I	M	S	R	21	42.0	7.89	3740	5.48	89.0
43-001	COMMON CARP	O	T	M	G	5	10.0	1.88	26800	39.30	2680.0
43-021	SILVER SHINER	I	I	S	N	15	30.0	5.64	200	0.29	6.6
43-032	SPOTFIN SHINER	I		M	N	20	40.0	7.52	240	0.35	6.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	38	76.0	14.29	200	0.29	2.6
43-044	CENTRAL STONEROLLER	H		N	N	19	38.0	7.14	400	0.59	10.5
47-002	CHANNEL CATFISH			C	F	4	8.0	1.50	7020	10.29	877.5
74-005	Striped X White Bass				E	1	2.0	0.38	300	0.44	150.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	0.75	60	0.09	15.0
77-003	ROCK BASS	C		C	S	2	4.0	0.75	340	0.50	85.0
77-004	SMALLMOUTH BASS	C	M	C	F	22	44.0	8.27	640	0.94	14.5
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	0.75	10	0.01	2.5
77-008	GREEN SUNFISH	I	T	C	S	7	14.0	2.63	200	0.29	14.2
77-009	BLUEGILL SUNFISH	I	P	C	S	33	66.0	12.41	1280	1.88	19.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	1	2.0	0.38	20	0.03	10.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.38	40	0.06	20.0
80-011	LOGPERCH	I	M	S	D	17	34.0	6.39	500	0.73	14.7
80-015	GREENSIDE DARTER	I	M	S	D	3	6.0	1.13	40	0.06	6.6
80-016	BANDED DARTER	I	I	S	D	7	14.0	2.63	22	0.03	1.5
80-019	BLUEBREAST DARTER	I	R	S	D	5	10.0	1.88	30	0.04	3.0
80-022	RAINBOW DARTER	I	M	S	D	2	4.0	0.75	8	0.01	2.0

No Species: 22 **Nat. Species:** 22 **Hybrids:** 2 **Total Counted:** 266 **Total Rel. Wt. :** 68190

IBI: 46.0 **MIwb:** 9.4

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN10 River: 02-400 Olentangy River RM: 7.10 Date: 09/03/2020

Time Fished: 2233 Distance: 0.500 Drainge (sq mi): 516.0 Depth: 0

Location: Ust. Henderson Rd. - dst. Beechwold Run Lat: 40.05578 Long: -83.02859

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-008	SILVER REDHORSE	I	M	S	R	2	4.0	0.77	9600	13.00	2400.0
40-009	BLACK REDHORSE	I	I	S	R	13	26.0	4.98	11500	15.58	442.3
40-010	GOLDEN REDHORSE	I	M	S	R	31	62.0	11.88	18420	24.95	297.1
40-015	NORTHERN HOG SUCKER	I	M	S	R	65	130.0	24.90	16200	21.94	124.6
43-001	COMMON CARP	O	T	M	G	2	4.0	0.77	9200	12.46	2300.0
43-021	SILVER SHINER	I	I	S	N	8	16.0	3.07	140	0.19	8.7
43-032	SPOTFIN SHINER	I		M	N	14	28.0	5.36	200	0.27	7.1
43-034	SAND SHINER	I	M	M	N	23	46.0	8.81	140	0.19	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	44	88.0	16.86	400	0.54	4.5
43-044	CENTRAL STONEROLLER	H		N	N	8	16.0	3.07	220	0.30	13.7
47-002	CHANNEL CATFISH			C	F	5	10.0	1.92	5630	7.63	563.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.38	180	0.24	90.0
74-001	WHITE BASS	P		M	F	1	2.0	0.38	400	0.54	200.0
77-004	SMALLMOUTH BASS	C	M	C	F	10	20.0	3.83	980	1.33	49.0
77-008	GREEN SUNFISH	I	T	C	S	2	4.0	0.77	100	0.14	25.0
77-009	BLUEGILL SUNFISH	I	P	C	S	2	4.0	0.77	60	0.08	15.0
80-011	LOGPERCH	I	M	S	D	15	30.0	5.75	400	0.54	13.3
80-014	JOHNNY DARTER	I		C	D	2	4.0	0.77	4	0.01	1.0
80-015	GREENSIDE DARTER	I	M	S	D	1	2.0	0.38	10	0.01	5.0
80-016	BANDED DARTER	I	I	S	D	5	10.0	1.92	12	0.02	1.2
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.38	4	0.01	2.0
80-022	RAINBOW DARTER	I	M	S	D	5	10.0	1.92	20	0.03	2.0
80-024	FANTAIL DARTER	I		C	D	1	2.0	0.38	2	0.00	1.0

No Species: 23 **Nat. Species:** 22 **Hybrids:** 0 **Total Counted:** 261 **Total Rel. Wt. :** 73822

IBI: 48.0 **MIwb:** 9.5

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN10 River: 02-400 Olentangy River RM: 7.10 Date: 10/14/2020

Time Fished: 3562 Distance: 0.300 Drainge (sq mi): 516.0 Depth: 0

Location: Ust. Henderson Rd. - dst. Beechwold Run Lat: 40.05578 Long: -83.02859

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-010	GOLDEN REDHORSE	I	M	S	R	1	1.0	0.29	150	7.56	150.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	10	10.0	2.94	790	39.82	79.0
43-032	SPOTFIN SHINER	I		M	N	16	16.0	4.71	50	2.52	3.1
43-034	SAND SHINER	I	M	M	N	135	135.0	39.71	300	15.12	2.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	59	59.0	17.35	50	2.52	0.8
43-044	CENTRAL STONEROLLER	H		N	N	3	3.0	0.88	30	1.51	10.0
47-004	YELLOW BULLHEAD	I	T	C		1	1.0	0.29	110	5.54	110.0
47-008	STONECAT MADTOM	I	I	C		6	6.0	1.76	240	12.10	40.0
47-012	BRINDLED MADTOM	I	I	C		4	4.0	1.18	8	0.40	2.0
77-003	ROCK BASS	C		C	S	1	1.0	0.29	20	1.01	20.0
77-004	SMALLMOUTH BASS	C	M	C	F	7	7.0	2.06	50	2.52	7.1
77-008	GREEN SUNFISH	I	T	C	S	6	6.0	1.76	60	3.02	10.0
77-009	BLUEGILL SUNFISH	I	P	C	S	6	6.0	1.76	10	0.50	1.6
80-014	JOHNNY DARTER	I		C	D	11	11.0	3.24	10	0.50	0.9
80-015	GREENSIDE DARTER	I	M	S	D	2	2.0	0.59	15	0.76	7.5
80-016	BANDED DARTER	I	I	S	D	14	14.0	4.12	20	1.01	1.4
80-019	BLUEBREAST DARTER	I	R	S	D	1	1.0	0.29	1	0.05	1.0
80-022	RAINBOW DARTER	I	M	S	D	37	37.0	10.88	40	2.02	1.0
80-024	FANTAIL DARTER	I		C	D	20	20.0	5.88	30	1.51	1.5

No Species: 19 **Nat. Species:** 19 **Hybrids:** 0 **Total Counted:** 340 **Total Rel. Wt. :** 1984
IBI: 40.0 **MIwb:** 7.2

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN11 River: 02-400 Olentangy River RM: 5.65 Date: 09/03/2020

Time Fished: 2421 Distance: 0.500 Drainge (sq mi): 524.0 Depth: 0

Location: at Northmoor Park Lat: 40.03811 Long: -83.02866

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	1.23	3800	5.83	950.0
40-010	GOLDEN REDHORSE	I	M	S	R	27	54.0	16.56	15760	24.20	291.8
40-015	NORTHERN HOG SUCKER	I	M	S	R	2	4.0	1.23	1160	1.78	290.0
43-001	COMMON CARP	O	T	M	G	6	12.0	3.68	25000	38.38	2083.3
43-003	GOLDEN SHINER	I	T	M	N	5	10.0	3.07	200	0.31	20.0
43-021	SILVER SHINER	I	I	S	N	4	8.0	2.45	100	0.15	12.5
43-032	SPOTFIN SHINER	I		M	N	9	18.0	5.52	120	0.18	6.6
43-043	BLUNTNOSE MINNOW	O	T	C	N	14	28.0	8.59	100	0.15	3.5
47-002	CHANNEL CATFISH			C	F	3	6.0	1.84	10800	16.58	1800.0
47-004	YELLOW BULLHEAD	I	T	C		1	2.0	0.61	6	0.01	3.0
70-001	BROOK SILVERSIDE	I	M	M		3	6.0	1.84	6	0.01	1.0
77-001	WHITE CRAPPIE	I		C	S	2	4.0	1.23	140	0.21	35.0
77-002	BLACK CRAPPIE	I		C	S	1	2.0	0.61	100	0.15	50.0
77-003	ROCK BASS	C		C	S	2	4.0	1.23	260	0.40	65.0
77-004	SMALLMOUTH BASS	C	M	C	F	4	8.0	2.45	4960	7.62	620.0
77-008	GREEN SUNFISH	I	T	C	S	52	104.0	31.90	1760	2.70	16.9
77-009	BLUEGILL SUNFISH	I	P	C	S	11	22.0	6.75	360	0.55	16.3
77-010	ORANGESPOTTED SUNFISH	I		C	S	7	14.0	4.29	100	0.15	7.1
77-011	LONGEAR SUNFISH	I	M	C	S	6	12.0	3.68	200	0.31	16.6
77-015	GREEN SF X BLUEGILL SF					2	4.0	1.23	200	0.31	50.0

No Species: 19 **Nat. Species:** 18 **Hybrids:** 1 **Total Counted:** 163 **Total Rel. Wt. :** 65132
IBI: 32.0 **MIwb:** 8.2

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN12 River: 02-400 Olentangy River RM: 4.30 Date: 09/14/2020

Time Fished: 2307 Distance: 0.500 Drainge (sq mi): 529.0 Depth: 0

Location: Ust. Dodridge Dam in impoundment adj. OSU Wetland Res.
Lat: 40.02177 Long: -83.01922

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		14	28.0	7.37	1160	2.43	41.4
40-010	GOLDEN REDHORSE	I	M	S	R	40	80.0	21.05	21460	44.91	268.2
40-015	NORTHERN HOG SUCKER	I	M	S	R	3	6.0	1.58	400	0.84	66.6
43-001	COMMON CARP	O	T	M	G	2	4.0	1.05	9000	18.83	2250.0
43-021	SILVER SHINER	I	I	S	N	2	4.0	1.05	40	0.08	10.0
43-034	SAND SHINER	I	M	M	N	8	16.0	4.21	20	0.04	1.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	38	76.0	20.00	120	0.25	1.5
47-002	CHANNEL CATFISH			C	F	2	4.0	1.05	2060	4.31	515.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.53	140	0.29	70.0
70-001	BROOK SILVERSIDE	I	M	M		2	4.0	1.05	4	0.01	1.0
74-001	WHITE BASS	P		M	F	1	2.0	0.53	200	0.42	100.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	1.05	120	0.25	30.0
77-003	ROCK BASS	C		C	S	2	4.0	1.05	200	0.42	50.0
77-004	SMALLMOUTH BASS	C	M	C	F	11	22.0	5.79	11080	23.19	503.6
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	1.05	320	0.67	80.0
77-008	GREEN SUNFISH	I	T	C	S	18	36.0	9.47	600	1.26	16.6
77-009	BLUEGILL SUNFISH	I	P	C	S	4	8.0	2.11	100	0.21	12.5
77-010	ORANGESPOTTED SUNFISH	I		C	S	2	4.0	1.05	40	0.08	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	33	66.0	17.37	660	1.38	10.0
77-999	HYBRID X SUNFISH					1	2.0	0.53	20	0.04	10.0
80-011	LOGPERCH	I	M	S	D	2	4.0	1.05	40	0.08	10.0

No Species: 19 **Nat. Species:** 19 **Hybrids:** 1 **Total Counted:** 190 **Total Rel. Wt. :** 47784

IBI: 36.0 **MIwb:** 8.2

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN01 River: 02-400 Olentangy River RM: 3.95 Date: 09/14/2020

Time Fished: 2885 Distance: 0.500 Drainge (sq mi): 531.0 Depth: 0

Location: Dst. Dodridge lowhead dam (Ust Dodridge St) Lat: 40.01661 Long: -83.06470

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		88	176.0	18.49	4060	3.57	23.0
40-005	QUILLBACK CARPSUCKER	O		M	C	7	14.0	1.47	2000	1.76	142.8
40-008	SILVER REDHORSE	I	M	S	R	3	6.0	0.63	6000	5.28	1000.0
40-009	BLACK REDHORSE	I	I	S	R	6	12.0	1.26	4800	4.23	400.0
40-010	GOLDEN REDHORSE	I	M	S	R	58	116.0	12.18	23860	21.01	205.6
40-013	RIVER REDHORSE	I	I	S	R	3	6.0	0.63	16600	14.62	2766.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	21	42.0	4.41	2840	2.50	67.6
43-001	COMMON CARP	O	T	M	G	6	12.0	1.26	14400	12.68	1200.0
43-021	SILVER SHINER	I	I	S	N	14	28.0	2.94	80	0.07	2.8
43-032	SPOTFIN SHINER	I		M	N	29	58.0	6.09	240	0.21	4.1
43-034	SAND SHINER	I	M	M	N	19	38.0	3.99	50	0.04	1.3
43-043	BLUNTNOSE MINNOW	O	T	C	N	62	124.0	13.03	300	0.26	2.4
43-044	CENTRAL STONEROLLER	H		N	N	10	20.0	2.10	80	0.07	4.0
47-002	CHANNEL CATFISH			C	F	16	32.0	3.36	19200	16.91	600.0
47-004	YELLOW BULLHEAD	I	T	C		1	2.0	0.21	20	0.02	10.0
47-007	FLATHEAD CATFISH	P		C	F	1	2.0	0.21	60	0.05	30.0
47-008	STONECAT MADTOM	I	I	C		1	2.0	0.21	20	0.02	10.0
47-012	BRINDLED MADTOM	I	I	C		1	2.0	0.21	20	0.02	10.0
70-001	BROOK SILVERSIDE	I	M	M		1	2.0	0.21	2	0.00	1.0
74-001	WHITE BASS	P		M	F	1	2.0	0.21	30	0.03	15.0
77-002	BLACK CRAPPIE	I		C	S	2	4.0	0.42	360	0.32	90.0
77-004	SMALLMOUTH BASS	C	M	C	F	13	26.0	2.73	10830	9.54	416.5
77-006	LARGEMOUTH BASS	C		C	F	2	4.0	0.42	400	0.35	100.0
77-008	GREEN SUNFISH	I	T	C	S	17	34.0	3.57	400	0.35	11.7
77-009	BLUEGILL SUNFISH	I	P	C	S	40	80.0	8.40	1000	0.88	12.5
77-010	ORANGESPOTTED SUNFISH	I		C	S	1	2.0	0.21	20	0.02	10.0
77-011	LONGEAR SUNFISH	I	M	C	S	23	46.0	4.83	200	0.18	4.3
77-012	REDEAR SUNFISH	I		C	E	1	2.0	0.21	60	0.05	30.0
77-015	GREEN SF X BLUEGILL SF					5	10.0	1.05	260	0.23	26.0
80-011	LOGPERCH	I	M	S	D	4	8.0	0.84	100	0.09	12.5
80-015	GREENSIDE DARTER	I	M	S	D	5	10.0	1.05	60	0.05	6.0
80-016	BANDED DARTER	I	I	S	D	2	4.0	0.42	4	0.00	1.0
80-019	BLUEBREAST DARTER	I	R	S	D	1	2.0	0.21	4	0.00	2.0
80-022	RAINBOW DARTER	I	M	S	D	5	10.0	1.05	20	0.02	2.0
80-026	SAUGER X WALLEYE	P			E	7	14.0	1.47	5190	4.57	370.7

No Species: 32 **Nat. Species:** 31 **Hybrids:** 2 **Total Counted:** 476 **Total Rel. Wt. :** 113570

IBI: 50.0 **MIwb:** 10.2

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN02 River: 02-400 Olentangy River RM: 2.00 Date: 09/15/2020

Time Fished: 3447 Distance: 0.300 Drainge (sq mi): 537.0 Depth: 0

Location: Ust. Former 5th Ave. Dam (formerly impounded) - King Ave. Lat: 39.98887 Long: -83.02428

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		66	66.0	12.52	780	1.97	11.8
40-008	SILVER REDHORSE	I	M	S	R	3	3.0	0.57	5000	12.60	1666.6
40-009	BLACK REDHORSE	I	I	S	R	13	13.0	2.47	6400	16.13	492.3
40-010	GOLDEN REDHORSE	I	M	S	R	15	15.0	2.85	5500	13.86	366.6
40-015	NORTHERN HOG SUCKER	I	M	S	R	35	35.0	6.64	5090	12.83	145.4
43-001	COMMON CARP	O	T	M	G	6	6.0	1.14	12000	30.24	2000.0
43-003	GOLDEN SHINER	I	T	M	N	1	1.0	0.19	3	0.01	3.0
43-005	RIVER CHUB	I	I	N	N	6	6.0	1.14	100	0.25	16.6
43-015	SUCKERMOUTH MINNOW	I		S	N	4	4.0	0.76	30	0.08	7.5
43-021	SILVER SHINER	I	I	S	N	22	22.0	4.17	100	0.25	4.5
43-022	ROSYFACE SHINER	I	I	S	N	6	6.0	1.14	20	0.05	3.3
43-032	SPOTFIN SHINER	I		M	N	26	26.0	4.93	110	0.28	4.2
43-034	SAND SHINER	I	M	M	N	30	30.0	5.69	80	0.20	2.6
43-043	BLUNTNOSE MINNOW	O	T	C	N	27	27.0	5.12	150	0.38	5.5
43-044	CENTRAL STONEROLLER	H		N	N	32	32.0	6.07	340	0.86	10.6
47-008	STONECAT MADTOM	I	I	C		7	7.0	1.33	150	0.38	21.4
77-004	SMALLMOUTH BASS	C	M	C	F	22	22.0	4.17	1950	4.91	88.6
77-008	GREEN SUNFISH	I	T	C	S	2	2.0	0.38	15	0.04	7.5
77-009	BLUEGILL SUNFISH	I	P	C	S	8	8.0	1.52	140	0.35	17.5
77-011	LONGEAR SUNFISH	I	M	C	S	5	5.0	0.95	60	0.15	12.0
77-015	GREEN SF X BLUEGILL SF					2	2.0	0.38	70	0.18	35.0
80-011	LOGPERCH	I	M	S	D	22	22.0	4.17	310	0.78	14.0
80-014	JOHNNY DARTER	I		C	D	2	2.0	0.38	3	0.01	1.5
80-015	GREENSIDE DARTER	I	M	S	D	19	19.0	3.61	100	0.25	5.2
80-016	BANDED DARTER	I	I	S	D	80	80.0	15.18	150	0.38	1.8
80-019	BLUEBREAST DARTER	I	R	S	D	33	33.0	6.26	120	0.30	3.6
80-022	RAINBOW DARTER	I	M	S	D	27	27.0	5.12	100	0.25	3.7
80-024	FANTAIL DARTER	I		C	D	4	4.0	0.76	6	0.02	1.5
80-026	SAUGER X WALLEYE	P			E	2	2.0	0.38	800	2.02	400.0

No Species: 26 **Nat. Species:** 26 **Hybrids:** 2 **Total Counted:** 527 **Total Rel. Wt. :** 39677
IBI: 54.0 **MIwb:** 9.4

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN02 River: 02-400 Olentangy River RM: 2.00 Date: 10/14/2020

Time Fished: 3420 Distance: 0.300 Drainge (sq mi): 537.0 Depth: 0

Location: Ust. Former 5th Ave. Dam (formerly impounded) - King Ave. Lat: 39.98887 Long: -83.02428

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		9	9.0	2.74	80	0.62	8.8
40-005	QUILLBACK CARPSUCKER	O		M	C	1	1.0	0.30	2000	15.51	2000.0
40-009	BLACK REDHORSE	I	I	S	R	4	4.0	1.22	3800	29.47	950.0
40-010	GOLDEN REDHORSE	I	M	S	R	3	3.0	0.91	2050	15.90	683.3
40-015	NORTHERN HOG SUCKER	I	M	S	R	6	6.0	1.83	640	4.96	106.6
43-001	COMMON CARP	O	T	M	G	1	1.0	0.30	2000	15.51	2000.0
43-005	RIVER CHUB	I	I	N	N	4	4.0	1.22	30	0.23	7.5
43-021	SILVER SHINER	I	I	S	N	3	3.0	0.91	10	0.08	3.3
43-032	SPOTFIN SHINER	I		M	N	7	7.0	2.13	20	0.16	2.8
43-034	SAND SHINER	I	M	M	N	39	39.0	11.89	50	0.39	1.2
43-043	BLUNTNOSE MINNOW	O	T	C	N	17	17.0	5.18	30	0.23	1.7
43-044	CENTRAL STONEROLLER	H		N	N	2	2.0	0.61	70	0.54	35.0
47-002	CHANNEL CATFISH			C	F	2	2.0	0.61	10	0.08	5.0
47-007	FLATHEAD CATFISH	P		C	F	2	2.0	0.61	10	0.08	5.0
47-008	STONECAT MADTOM	I	I	C		6	6.0	1.83	20	0.16	3.3
47-012	BRINDLED MADTOM	I	I	C		1	1.0	0.30	3	0.02	3.0
77-004	SMALLMOUTH BASS	C	M	C	F	3	3.0	0.91	10	0.08	3.3
77-008	GREEN SUNFISH	I	T	C	S	1	1.0	0.30	5	0.04	5.0
77-009	BLUEGILL SUNFISH	I	P	C	S	4	4.0	1.22	20	0.16	5.0
80-011	LOGPERCH	I	M	S	D	4	4.0	1.22	20	0.16	5.0
80-014	JOHNNY DARTER	I		C	D	3	3.0	0.91	6	0.05	2.0
80-015	GREENSIDE DARTER	I	M	S	D	10	10.0	3.05	30	0.23	3.0
80-016	BANDED DARTER	I	I	S	D	55	55.0	16.77	90	0.70	1.6
80-019	BLUEBREAST DARTER	I	R	S	D	28	28.0	8.54	60	0.47	2.1
80-022	RAINBOW DARTER	I	M	S	D	84	84.0	25.61	280	2.17	3.3
80-024	FANTAIL DARTER	I		C	D	28	28.0	8.54	50	0.39	1.7
80-026	SAUGER X WALLEYE	P			E	1	1.0	0.30	1500	11.63	1500.0

No Species: 25 **Nat. Species:** 25 **Hybrids:** 1 **Total Counted:** 328 **Total Rel. Wt. :** 12894

IBI: 52.0 **MIwb:** 8.1

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN03 River: 02-400 Olentangy River RM: 1.80 Date: 09/18/2020

Time Fished: 2488 Distance: 0.500 Drainge (sq mi): 537.0 Depth: 0

Location: ust. 3rd. Ave. Lat: 39.98742 Long: -83.02408

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		21	42.0	5.37	3240	2.46	77.1
40-005	QUILLBACK CARPSUCKER	O		M	C	2	4.0	0.51	3200	2.43	800.0
40-008	SILVER REDHORSE	I	M	S	R	3	6.0	0.77	9000	6.82	1500.0
40-009	BLACK REDHORSE	I	I	S	R	15	30.0	3.84	12260	9.29	408.6
40-010	GOLDEN REDHORSE	I	M	S	R	32	64.0	8.18	27480	20.83	429.3
40-013	RIVER REDHORSE	I	I	S	R	1	2.0	0.26	5600	4.24	2800.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	26	52.0	6.65	9260	7.02	178.0
43-001	COMMON CARP	O	T	M	G	6	12.0	1.53	30200	22.89	2516.6
43-003	GOLDEN SHINER	I	T	M	N	4	8.0	1.02	12	0.01	1.5
43-005	RIVER CHUB	I	I	N	N	2	4.0	0.51	60	0.05	15.0
43-015	SUCKERMOUTH MINNOW	I		S	N	6	12.0	1.53	40	0.03	3.3
43-021	SILVER SHINER	I	I	S	N	19	38.0	4.86	100	0.08	2.6
43-032	SPOTFIN SHINER	I		M	N	44	88.0	11.25	400	0.30	4.5
43-034	SAND SHINER	I	M	M	N	8	16.0	2.05	30	0.02	1.8
43-043	BLUNTNOSE MINNOW	O	T	C	N	57	114.0	14.58	400	0.30	3.5
43-044	CENTRAL STONEROLLER	H		N	N	15	30.0	3.84	340	0.26	11.3
47-002	CHANNEL CATFISH			C	F	8	16.0	2.05	13320	10.10	832.5
47-007	FLATHEAD CATFISH	P		C	F	2	4.0	0.51	6010	4.56	1502.5
47-008	STONECAT MADTOM	I	I	C		4	8.0	1.02	100	0.08	12.5
47-012	BRINDLED MADTOM	I	I	C		1	2.0	0.26	8	0.01	4.0
70-001	BROOK SILVERSIDE	I	M	M		3	6.0	0.77	6	0.00	1.0
74-005	Striped X White Bass				E	2	4.0	0.51	2800	2.12	700.0
77-004	SMALLMOUTH BASS	C	M	C	F	10	20.0	2.56	3060	2.32	153.0
77-008	GREEN SUNFISH	I	T	C	S	4	8.0	1.02	20	0.02	2.5
77-009	BLUEGILL SUNFISH	I	P	C	S	8	16.0	2.05	220	0.17	13.7
77-011	LONGEAR SUNFISH	I	M	C	S	3	6.0	0.77	60	0.05	10.0
77-015	GREEN SF X BLUEGILL SF					1	2.0	0.26	40	0.03	20.0
80-011	LOGPERCH	I	M	S	D	5	10.0	1.28	140	0.11	14.0
80-015	GREENSIDE DARTER	I	M	S	D	13	26.0	3.32	120	0.09	4.6
80-016	BANDED DARTER	I	I	S	D	36	72.0	9.21	100	0.08	1.3
80-019	BLUEBREAST DARTER	I	R	S	D	20	40.0	5.12	90	0.07	2.2
80-022	RAINBOW DARTER	I	M	S	D	4	8.0	1.02	10	0.01	1.2
80-024	FANTAIL DARTER	I		C	D	3	6.0	0.77	10	0.01	1.6
80-026	SAUGER X WALLEYE	P			E	3	6.0	0.77	4200	3.18	700.0

No Species: 30 **Nat. Species:** 30 **Hybrids:** 3 **Total Counted:** 391 **Total Rel. Wt. :** 131936

IBI: 46.0 **MIwb:** 10.3

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN04 River: 02-400 Olentangy River RM: 0.20 Date: 09/04/2020

Time Fished: 3527 Distance: 0.300 Drainge (sq mi): 543.0 Depth: 0

Location: ust. Confluence with Scioto River Lat: 39.96651 Long: -83.01886

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		9	9.0	1.54	610	1.75	67.7
40-005	QUILLBACK CARPSUCKER	O		M	C	4	4.0	0.68	2950	8.46	737.5
40-009	BLACK REDHORSE	I	I	S	R	8	8.0	1.37	5000	14.33	625.0
40-010	GOLDEN REDHORSE	I	M	S	R	17	17.0	2.90	10200	29.24	600.0
40-013	RIVER REDHORSE	I	I	S	R	1	1.0	0.17	2300	6.59	2300.0
40-015	NORTHERN HOG SUCKER	I	M	S	R	22	22.0	3.75	2700	7.74	122.7
43-001	COMMON CARP	O	T	M	G	2	2.0	0.34	3300	9.46	1650.0
43-005	RIVER CHUB	I	I	N	N	12	12.0	2.05	195	0.56	16.2
43-013	CREEK CHUB	G	T	N	N	2	2.0	0.34	6	0.02	3.0
43-015	SUCKERMOUTH MINNOW	I		S	N	74	74.0	12.63	450	1.29	6.0
43-021	SILVER SHINER	I	I	S	N	14	14.0	2.39	40	0.11	2.8
43-022	ROSYFACE SHINER	I	I	S	N	3	3.0	0.51	9	0.03	3.0
43-032	SPOTFIN SHINER	I		M	N	23	23.0	3.92	80	0.23	3.4
43-034	SAND SHINER	I	M	M	N	10	10.0	1.71	12	0.03	1.2
43-035	MIMIC SHINER	I	I	M	N	1	1.0	0.17	2	0.01	2.0
43-041	BULLHEAD MINNOW	O		C	N	1	1.0	0.17	3	0.01	3.0
43-043	BLUNTNOSE MINNOW	O	T	C	N	27	27.0	4.61	130	0.37	4.8
43-044	CENTRAL STONEROLLER	H		N	N	40	40.0	6.83	420	1.20	10.5
47-002	CHANNEL CATFISH			C	F	3	3.0	0.51	2200	6.31	733.3
47-007	FLATHEAD CATFISH	P		C	F	2	2.0	0.34	20	0.06	10.0
47-008	STONECAT MADTOM	I	I	C		1	1.0	0.17	50	0.14	50.0
74-001	WHITE BASS	P		M	F	1	1.0	0.17	60	0.17	60.0
77-003	ROCK BASS	C		C	S	1	1.0	0.17	30	0.09	30.0
77-004	SMALLMOUTH BASS	C	M	C	F	16	16.0	2.73	2260	6.48	141.2
77-008	GREEN SUNFISH	I	T	C	S	12	12.0	2.05	100	0.29	8.3
77-009	BLUEGILL SUNFISH	I	P	C	S	20	20.0	3.41	210	0.60	10.5
77-999	HYBRID X SUNFISH					1	1.0	0.17	50	0.14	50.0
80-001	SAUGER	P		S	F	1	1.0	0.17	700	2.01	700.0
80-011	LOGPERCH	I	M	S	D	32	32.0	5.46	420	1.20	13.1
80-015	GREENSIDE DARTER	I	M	S	D	13	13.0	2.22	80	0.23	6.1
80-016	BANDED DARTER	I	I	S	D	132	132.0	22.53	100	0.29	0.7
80-019	BLUEBREAST DARTER	I	R	S	D	40	40.0	6.83	125	0.36	3.1
80-022	RAINBOW DARTER	I	M	S	D	29	29.0	4.95	53	0.15	1.8
80-024	FANTAIL DARTER	I		C	D	12	12.0	2.05	18	0.05	1.5

No Species: 32 **Nat. Species:** 32 **Hybrids:** 1 **Total Counted:** 586 **Total Rel. Wt. :** 34883

IBI: 48.0 **MIwb:** 9.9

Appendix Table B-11. Midwest Biodiversity Institute Fish Species List

Site ID: OLN04 River: 02-400 Olentangy River RM: 0.20 Date: 10/13/2020

Time Fished: 4496 Distance: 0.300 Drainge (sq mi): 543.0 Depth: 0

Location: ust. Confluence with Scioto River Lat: 39.96651 Long: -83.01886

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
20-003	GIZZARD SHAD	O		M		23	23.0	6.28	460	1.48	20.0
40-008	SILVER REDHORSE	I	M	S	R	1	1.0	0.27	2200	7.07	2200.0
40-009	BLACK REDHORSE	I	I	S	R	8	8.0	2.19	5800	18.65	725.0
40-010	GOLDEN REDHORSE	I	M	S	R	15	15.0	4.10	8600	27.65	573.3
40-015	NORTHERN HOG SUCKER	I	M	S	R	38	38.0	10.38	6980	22.44	183.6
43-001	COMMON CARP	O	T	M	G	1	1.0	0.27	3200	10.29	3200.0
43-005	RIVER CHUB	I	I	N	N	7	7.0	1.91	100	0.32	14.2
43-015	SUCKERMOUTH MINNOW	I		S	N	27	27.0	7.38	150	0.48	5.5
43-021	SILVER SHINER	I	I	S	N	12	12.0	3.28	80	0.26	6.6
43-022	ROSYFACE SHINER	I	I	S	N	8	8.0	2.19	40	0.13	5.0
43-032	SPOTFIN SHINER	I		M	N	19	19.0	5.19	60	0.19	3.1
43-034	SAND SHINER	I	M	M	N	14	14.0	3.83	40	0.13	2.8
43-043	BLUNTNOSE MINNOW	O	T	C	N	45	45.0	12.30	230	0.74	5.1
43-044	CENTRAL STONEROLLER	H		N	N	44	44.0	12.02	1000	3.21	22.7
47-008	STONECAT MADTOM	I	I	C		1	1.0	0.27	35	0.11	35.0
77-004	SMALLMOUTH BASS	C	M	C	F	34	34.0	9.29	1680	5.40	49.4
77-006	LARGEMOUTH BASS	C		C	F	2	2.0	0.55	30	0.10	15.0
77-008	GREEN SUNFISH	I	T	C	S	7	7.0	1.91	110	0.35	15.7
77-009	BLUEGILL SUNFISH	I	P	C	S	3	3.0	0.82	60	0.19	20.0
77-015	GREEN SF X BLUEGILL SF					1	1.0	0.27	40	0.13	40.0
80-011	LOGPERCH	I	M	S	D	1	1.0	0.27	50	0.16	50.0
80-015	GREENSIDE DARTER	I	M	S	D	5	5.0	1.37	40	0.13	8.0
80-016	BANDED DARTER	I	I	S	D	14	14.0	3.83	20	0.06	1.4
80-019	BLUEBREAST DARTER	I	R	S	D	6	6.0	1.64	25	0.08	4.1
80-022	RAINBOW DARTER	I	M	S	D	16	16.0	4.37	35	0.11	2.1
80-024	FANTAIL DARTER	I		C	D	14	14.0	3.83	40	0.13	2.8

No Species: 24 **Nat. Species:** 24 **Hybrids:** 1 **Total Counted:** 366 **Total Rel. Wt. :** 31105
IBI: 50.0 **MIwb:** 9.0

APPENDIX B: Olentangy Tributaries Fish Assemblage Data
B-12: Olentangy Tributaries IBI Metrics and IBI Scores
B-13: Fish Species Grand Adena Brook (all sites combined)
B-14: Fish Species Grand Rush Run (all sites combined)
B-15: Olentangy Tributaries Fish Species by Site and Sample 2020

Appendix Table B-12. Headwater IBI scores and metrics for sites sampled in Olentangy River tributaries sampled by MBI in 2020.

Site ID	River Mile Type	Drainage Date	Drainage area (sq mi)	Number of						Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI
				Total species	Minnow species	Headwater species	Sensitive species	Darter & Sculpin species	Simple Lithophils	Tolerant fishes	Omni-vores	Pioneering fishes	Insect-ivores	DELT anomalies		
<i>(02-401) - Adena Brook</i>																
Year: 2020																
ADN04	1.70 E	07/21/2020	1.8	3(1)	3(3)	1(1)	0(1)	0(1)	1(1)	88(1)	0(5)	51(3)	0(1)	0.0(5)	44(1)	24
ADN03	0.80 F	07/21/2020	2.3	3(1)	3(3)	1(1)	0(1)	0(1)	1(1)	90(1)	0(5)	83(1)	0(1)	0.0(5)	40(1)	22
ADN02	0.52 F	07/21/2020	2.7	6(3)	3(3)	1(1)	0(1)	1(1)	2(3)	80(1)	0(5)	47(3)	6(1)	0.0(5)	122(3)	30
ADN01	0.23 E	07/21/2020	2.7	10(5)	3(3)	2(3)	1(1)	4(5)	5(5)	86(1)	3(5)	77(1)	34(5)	0.0(5)	56(1)	40
<i>(02-403) - Rush Run</i>																
Year: 2020																
RSH05	3.55 F	07/24/2020	0.4	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0(1)	0.0(1)	0(1) * *	12
RSH04	2.90 F	07/24/2020	0.7	1(1)	0(1)	0(1)	0(1)	0(1)	0(1)	100(1)	0(1)	100(1)	100(1)	0.0(1)	0(1) * *	12
RSH03	1.90 F	07/24/2020	1.7	1(1)	0(1)	0(1)	0(1)	0(1)	0(1)	100(1)	0(5)	100(1)	100(5)	0.0(5)	0(1) * *	24
RSH02	1.03 F	07/22/2020	2.3	2(1)	1(1)	0(1)	0(1)	0(1)	0(1)	100(1)	0(5)	100(1)	22(3)	0.0(5)	0(1)	22
RSH01	0.24 F	07/24/2020	2.6	8(3)	3(3)	2(3)	1(1)	2(3)	3(3)	78(1)	3(5)	68(1)	15(3)	0.0(5)	80(3)	34
<i>(02-483) - Beechwold Run (Unnamed Trib to Olentangy R @ RM 7.</i>																
Year: 2020																
BCH01	0.10 F	07/22/2020	0.2	1(1)	1(1)	0(1)	0(1)	0(1)	0(1)	100(1)	0(5)	100(1)	0(1)	0.0(5)	0(1) * *	20

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Appendix B-13: Midwest Biodiversity Institute Fish Species List - Grand Totals

Rivers: *Adena Brook*

Years: 2020

Number of Samples: 4 Data Sources: 99 Data Types: E; F

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-013	CREEK CHUB	G	T	N	N	483	241.5	54.89	0	***. **	0.0
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	193	96.5	21.93	0	***. **	0.0
43-044	CENTRAL STONEROLLER	H		N	N	113	56.5	12.84	0	***. **	0.0
77-008	GREEN SUNFISH	I	T	C	S	65	32.5	7.39	0	***. **	0.0
80-022	RAINBOW DARTER	I	M	S	D	8	4.0	0.91	0	***. **	0.0
40-016	WHITE SUCKER	O	T	S	W	5	2.5	0.57	0	***. **	0.0
77-009	BLUEGILL SUNFISH	I	P	C	S	3	1.5	0.34	0	***. **	0.0
80-023	ORANGETHROAT DARTER	I		S	D	3	1.5	0.34	0	***. **	0.0
47-004	YELLOW BULLHEAD	I	T	C		2	1.0	0.23	0	***. **	0.0
80-024	FANTAIL DARTER	I		C	D	2	1.0	0.23	0	***. **	0.0
43-001	COMMON CARP	O	T	M	G	1	0.5	0.11	0	***. **	0.0
77-006	LARGEMOUTH BASS	C		C	F	1	0.5	0.11	0	***. **	0.0
80-027	RAINBOW X ORANGETHROAT	I		S	D	1	0.5	0.11	0	***. **	0.0
No Species: 13		Nat. Species: 11		Hybrids: 1		Total Counted: 880		Total Rel. Wt. : 0			

Appendix B-14: Midwest Biodiversity Institute Fish Species List - Grand Totals

Rivers: *Rush Run*

Years: 2020

Number of Samples: 5 Data Sources: 99 Data Types: F

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-013	CREEK CHUB	G	T	N	N	182	74.8	61.69	0	***.**	0.0
77-008	GREEN SUNFISH	I	T	C	S	54	22.2	18.31	0	***.**	0.0
43-044	CENTRAL STONEROLLER	H		N	N	26	10.7	8.81	0	***.**	0.0
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	13	5.3	4.41	0	***.**	0.0
80-022	RAINBOW DARTER	I	M	S	D	9	3.7	3.05	0	***.**	0.0
40-016	WHITE SUCKER	O	T	S	W	6	2.5	2.03	0	***.**	0.0
77-009	BLUEGILL SUNFISH	I	P	C	S	3	1.2	1.02	0	***.**	0.0
80-024	FANTAIL DARTER	I		C	D	2	0.8	0.68	0	***.**	0.0
99-999	NO FISH					0	0.0	0.00	0	***.**	*****

No Species: 9 **Nat. Species:** 9 **Hybrids:** 0 **Total Counted:** 295 **Total Rel. Wt. :** 0

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: ADN04 River: 02-401 Adena Brook RM: 1.70 Date: 07/21/2020
 Time Fished: 1275 Distance: 0.150 Drainge (sq mi): 1.8 Depth: 0
 Location: Intersection of Overbrook Dr. and Yaronia Dr. - ust. Lat: 40.04788 Long: -83.00586
 control site

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	69	138.0	37.50	0	0.00	0.0
43-013	CREEK CHUB	G	T	N	N	93	186.0	50.54	0	0.00	0.0
43-044	CENTRAL STONEROLLER	H		N	N	22	44.0	11.96	0	0.00	0.0
No Species: 3		Nat. Species: 3		Hybrids: 0		Total Counted: 184		Total Rel. Wt. :		0	
IBI: 24.0		MIwb: N/A									

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: ADN03 River: 02-401 Adena Brook RM: 0.80 Date: 07/21/2020

Time Fished: 2530 Distance: 0.150 Drainage (sq mi): 2.2 Depth: 0

Location: Dst. Overbrook Dr. adj. Canyon Drive - dst. Storm sewer outfall Lat: 40.04599 Long: -83.01798

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	15	30.0	7.39	0	0.00	0.0
43-013	CREEK CHUB	G	T	N	N	168	336.0	82.76	0	0.00	0.0
43-044	CENTRAL STONEROLLER	H		N	N	20	40.0	9.85	0	0.00	0.0

No Species: 3 **Nat. Species:** 3 **Hybrids:** 0 **Total Counted:** 203 **Total Rel. Wt. :** 0

IBI: 22.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: ADN02 River: 02-401 Adena Brook RM: 0.52 Date: 07/21/2020

Time Fished: 2203 Distance: 0.150 Drainge (sq mi): 2.6 Depth: 0

Location: Dst. N. High Street - dst. storm sewer outfall Lat: 40.04320 Long: -83.02116

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	98	196.0	32.78	0	0.00	0.0
43-013	CREEK CHUB	G	T	N	N	122	244.0	40.80	0	0.00	0.0
43-044	CENTRAL STONEROLLER	H		N	N	59	118.0	19.73	0	0.00	0.0
77-006	LARGEMOUTH BASS	C		C	F	1	2.0	0.33	0	0.00	0.0
77-008	GREEN SUNFISH	I	T	C	S	18	36.0	6.02	0	0.00	0.0
80-023	ORANGETHROAT DARTER	I		S	D	1	2.0	0.33	0	0.00	0.0

No Species: 6 **Nat. Species:** 6 **Hybrids:** 0 **Total Counted:** 299 **Total Rel. Wt. :** 0

IBI: 30.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: ADN01 River: 02-401 Adena Brook RM: 0.23 Date: 07/21/2020

Time Fished: 2042 Distance: 0.150 Drainge (sq mi): 2.7 Depth: 0

Location: Park of Roses - ust. storm sewer locations Lat: 40.04248 Long: -83.02664

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-016	WHITE SUCKER	O	T	S	W	5	10.0	2.58	0	0.00	0.0
43-001	COMMON CARP	O	T	M	G	1	2.0	0.52	0	0.00	0.0
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	11	22.0	5.67	0	0.00	0.0
43-013	CREEK CHUB	G	T	N	N	100	200.0	51.55	0	0.00	0.0
43-044	CENTRAL STONEROLLER	H		N	N	12	24.0	6.19	0	0.00	0.0
47-004	YELLOW BULLHEAD	I	T	C		2	4.0	1.03	0	0.00	0.0
77-008	GREEN SUNFISH	I	T	C	S	47	94.0	24.23	0	0.00	0.0
77-009	BLUEGILL SUNFISH	I	P	C	S	3	6.0	1.55	0	0.00	0.0
80-022	RAINBOW DARTER	I	M	S	D	8	16.0	4.12	0	0.00	0.0
80-023	ORANGETHROAT DARTER	I		S	D	2	4.0	1.03	0	0.00	0.0
80-024	FANTAIL DARTER	I		C	D	2	4.0	1.03	0	0.00	0.0
80-027	RAINBOW X ORANGETHROAT	I		S	D	1	2.0	0.52	0	0.00	0.0

No Species: 11 **Nat. Species:** 10 **Hybrids:** 1 **Total Counted:** 194 **Total Rel. Wt. :** 0

IBI: 40.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: RSH05 River: 02-403 Rush Run RM: 3.55 Date: 07/24/2020
 Time Fished: 1145 Distance: 0.150 Drainge (sq mi): 0.3 Depth: 0
 Location: dst. Wilson Bridge Rd. Lat: 40.10779 Long: -83.00137

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
99-999	NO FISH					0	0.0	***.**	0	0.00	*****

No Species: 0 **Nat. Species:** 1 **Hybrids:** 0 **Total Counted:** 0 **Total Rel. Wt. :** 0
IBI: 12.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: RSH04 River: 02-403 Rush Run RM: 2.90 Date: 07/24/2020
 Time Fished: 1686 Distance: 0.150 Drainge (sq mi): 0.6 Depth: 0
 Location: dst. Shrock Rd. Lat: 40.09921 Long: -83.00159

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
77-008	GREEN SUNFISH	I	T	C	S	6	12.0	100.00	0	0.00	0.0

No Species: 1 **Nat. Species:** 1 **Hybrids:** 0 **Total Counted:** 6 **Total Rel. Wt. :** 0
IBI: 12.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: RSH03 River: 02-403 Rush Run RM: 1.90 Date: 07/24/2020

Time Fished: 1636 Distance: 0.150 Drainge (sq mi): 1.6 Depth: 0

Location: ust. Proprietors Rd. Lat: 40.08673 Long: -83.00389

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
77-008	GREEN SUNFISH	I	T	C	S	15	30.0	100.00	0	0.00	0.0

No Species: 1 **Nat. Species:** 1 **Hybrids:** 0 **Total Counted:** 15 **Total Rel. Wt. :** 0

IBI: 24.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: RSH02 River: 02-403 Rush Run RM: 1.03 Date: 07/22/2020
 Time Fished: 2705 Distance: 0.130 Drainge (sq mi): 2.2 Depth: 0
 Location: Dst. Park Blvd. in Park Blvd. Park Lat: 40.07992 Long: -83.01475

Species Code:	Species Name:	Feed Guild	Toler-ance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
43-013	CREEK CHUB	G	T	N	N	72	166.2	78.26	0	0.00	0.0
77-008	GREEN SUNFISH	I	T	C	S	20	46.2	21.74	0	0.00	0.0

No Species: 2 **Nat. Species:** 2 **Hybrids:** 0 **Total Counted:** 92 **Total Rel. Wt. :** 0
IBI: 22.0 **MIwb:** N/A

Appendix Table B-15. Midwest Biodiversity Institute Fish Species List

Site ID: RSH01 River: 02-403 Rush Run RM: 0.24 Date: 07/24/2020

Time Fished: 3435 Distance: 0.150 Drainge (sq mi): 2.6 Depth: 0

Location: ust. Mouth/confluence w. Olentangy River Lat: 40.07634 Long: -83.02778

Species Code:	Species Name:	Feed Guild	Tolerance	Breed Guild	IBI Group	No. Fish	Rel. No.	% by No.	Rel. Wt.	% by Wt.	Av. Wt.
40-016	WHITE SUCKER	O	T	S	W	6	12.0	3.30	0	0.00	0.0
43-011	WESTERN BLACKNOSE DACE	G	T	S	N	13	26.0	7.14	0	0.00	0.0
43-013	CREEK CHUB	G	T	N	N	110	220.0	60.44	0	0.00	0.0
43-044	CENTRAL STONEROLLER	H		N	N	26	52.0	14.29	0	0.00	0.0
77-008	GREEN SUNFISH	I	T	C	S	13	26.0	7.14	0	0.00	0.0
77-009	BLUEGILL SUNFISH	I	P	C	S	3	6.0	1.65	0	0.00	0.0
80-022	RAINBOW DARTER	I	M	S	D	9	18.0	4.95	0	0.00	0.0
80-024	FANTAIL DARTER	I		C	D	2	4.0	1.10	0	0.00	0.0

No Species: 8 **Nat. Species:** 8 **Hybrids:** 0 **Total Counted:** 182 **Total Rel. Wt. :** 0

IBI: 34.0 **MIwb:** N/A

APPENDIX C: Scioto River Mainstem Macroinvertebrate Assemblage

C-1: Scioto River ICI Metrics and ICI Scores

C-2: Macroinvertebrate Taxa Grand Ust. Greenlawn Dam

C-3: Macroinvertebrate Taxa Grand Dst. Greenlawn Dam

C-4: Macroinvertebrate Taxa by Year Interval Ust. Greenlawn Dam 1981-2020

C-5: Macroinvertebrate Taxa by Year Interval Dst. Greenlawn Dam 1981-2020

C-6: Macroinvertebrate Taxa by Site

Appendix Table C-1. ICI metrics and values in the Scioto River during 2020.

Site ID	River Mile	Drainage Area (sq mi)	Number of				Percent:						ICI
			Total Taxa	Mayfly Taxa	Caddisfly Taxa	Dipteran Taxa	Mayflies	Caddisflies	Tanytarsini	Other Dipt/NI	Tolerant Organisms	Qual. EPT	
Scioto River (02-001)													
Year: 2020													
SR01	136.60	1050.0	38(6)	7(4)	3(2)	15(6)	25.1(6)	36.6(6)	0.1(2)	38.1(0)	9.6(0)	10(2)	34
SR02	133.40	1067.0	35(6)	8(6)	6(4)	13(6)	25.9(6)	33.6(6)	11.5(2)	28.9(2)	2.1(4)	12(4)	46
SR03	133.00	1068.0	28(4)	7(4)	7(6)	8(4)	25.6(6)	29.5(4)	26.2(6)	18.4(4)	1.8(4)	16(4)	46
SR03	132.60	1070.0	28(4)	7(4)	7(6)	8(4)	25.6(6)	29.5(4)	26.2(6)	18.3(4)	1.7(4)	16(4)	46
SR04	132.10	1610.0	29(4)	9(6)	7(6)	7(4)	23.9(6)	22.6(4)	35.1(6)	18.0(4)	0.9(6)	17(6)	52
SR05	130.10	1620.0	23(4)	4(2)	2(2)	8(4)	0.8(2)	1.3(0)	1.1(2)	96.8(0)	9.9(0)	2(0)	16
SR06	129.00	1621.0	25(4)	4(2)	6(4)	11(6)	0.9(2)	66.1(6)	10.2(4)	22.8(4)	2.7(2)	17(6)	40
SR07	127.70	1628.0	43(6)	10(6)	10(6)	12(6)	5.2(2)	58.5(6)	7.7(2)	28.2(2)	3.3(2)	18(6)	44
SR07	127.50	1628.0	43(6)	10(6)	10(6)	12(6)	5.2(2)	58.5(6)	7.7(2)	28.2(2)	3.3(2)	18(6)	44
SC08.2	127.40	1620.0	33(6)	6(4)	5(4)	13(6)	0.9(2)	40.3(6)	15.6(4)	42.9(0)	17.4(0)	10(2)	34
SR08.2	127.30	1620.0	33(6)	6(4)	5(4)	13(6)	0.9(2)	40.7(6)	15.7(4)	42.3(0)	16.6(0)	10(2)	34
SRJPMZ	127.00	1628.0	22(4)	1(0)	2(2)	11(6)	0.1(2)	1.2(0)	1.1(2)	97.3(0)	64.8(0)	2(0)	16
SR08	126.50	1629.0	30(4)	6(4)	8(6)	12(6)	1.8(2)	61.2(6)	12.5(4)	24.4(2)	2.8(2)	12(4)	40
SR09	125.40	1640.0	42(6)	8(6)	8(6)	15(6)	8.1(2)	42.0(6)	16.8(4)	32.6(0)	2.1(4)	15(4)	44
SR10	124.50	1640.0	36(6)	9(6)	7(6)	9(4)	5.6(2)	60.4(6)	19.0(4)	14.7(4)	1.8(4)	16(6)	48
SR11	120.10	1700.0	37(6)	7(4)	7(6)	14(6)	31.5(6)	43.8(6)	11.3(4)	12.7(6)	2.0(4)	20(6)	54
SRCSMZ	118.20	1708.0	21(2)	3(2)	5(4)	5(2)	1.3(2)	6.7(2)	2.8(2)	87.6(0)	10.4(0)	4(0)	16
SR12	118.00	1708.0	32(4)	5(4)	7(6)	14(6)	11.5(4)	36.6(6)	6.1(2)	45.5(0)	11.2(0)	14(4)	36
SR13	116.80	2260.0	32(4)	7(4)	7(6)	9(4)	26.5(6)	39.0(6)	11.1(4)	22.8(2)	1.6(4)	18(6)	46
SR14	116.30	2267.0	38(6)	7(4)	8(6)	11(6)	29.9(6)	39.4(6)	9.0(4)	21.2(4)	0.6(6)	19(6)	54
SR14	116.00	2260.0	38(6)	7(4)	8(6)	11(6)	29.9(6)	39.4(6)	9.0(4)	21.2(4)	0.6(6)	19(6)	54
SR15	114.00	2275.0	28(4)	5(4)	6(4)	12(6)	28.8(6)	47.4(6)	9.8(4)	13.3(4)	0.8(6)	15(6)	50
SR16	109.20	2311.0	28(4)	7(4)	5(4)	10(6)	42.3(6)	39.7(6)	9.6(4)	7.8(6)	0.4(6)	15(6)	52
SR17	107.40	2314.0	35(6)	6(4)	7(6)	12(6)	46.5(6)	27.5(4)	10.2(4)	14.7(4)	0.4(6)	17(6)	52
SR18	106.00	2609.0	22(4)	4(2)	6(4)	8(4)	23.7(6)	55.4(6)	12.6(4)	7.0(6)	0.3(6)	19(6)	48
SR19	102.00	2638.0	25(4)	6(4)	5(4)	10(6)	30.5(6)	52.7(6)	8.1(4)	8.1(6)	0.0(6)	22(6)	52
SR20	100.10	3197.0	19(2)	5(4)	5(4)	6(4)	25.4(6)	56.2(6)	6.9(2)	11.5(4)	0.2(6)	21(6)	44
SR21	99.40	3218.0	25(4)	7(6)	6(4)	7(4)	43.9(6)	30.7(4)	17.9(6)	7.1(6)	0.3(6)	17(6)	52
SR22	98.90	3218.0	30(4)	10(6)	6(4)	7(4)	33.7(6)	53.9(6)	4.0(2)	7.3(6)	0.2(6)	21(6)	50
SR22	98.70	3220.0	30(4)	10(6)	6(4)	7(4)	33.7(6)	53.9(6)	4.0(2)	7.3(6)	0.2(6)	20(6)	50
SR23	97.90	3220.0	34(6)	8(6)	7(4)	9(6)	43.0(6)	42.1(6)	6.3(2)	7.5(6)	0.0(6)	21(6)	54

Appendix Table C-2 . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentangy River upstream from the Greenlawn Dam in 2020.

Taxa Code	Taxa Name	Ohio EPA Tolerance	Taxa Group	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
03600	<i>Oligochaeta</i>	T	N	782	1.58	9	9
22300	<i>Argia sp</i>	F	O	11	0.02	9	9
16700	<i>Tricorythodes sp</i>	MI	M	2216	4.47	8	9
13400	<i>Stenacron sp</i>	F	M	946	1.91	8	9
52200	<i>Cheumatopsyche sp</i>	F	C	10843	21.89	8	8
52430	<i>Ceratopsyche morosa group</i>	MI	C	6057	12.23	8	8
11130	<i>Baetis intercalaris</i>	F	M	5984	12.08	8	8
01801	<i>Turbellaria</i>	F	N	2213	4.47	8	8
69400	<i>Stenelmis sp</i>	F	O	122	0.25	8	8
59970	<i>Petrophila sp</i>	MI	O	57	0.12	8	8
17200	<i>Caenis sp</i>	F	M	25	0.05	8	8
06201	<i>Hyaella azteca</i>	F	N	7	0.01	8	8
97601	<i>Corbicula fluminea</i>	F	N	3	0.01	8	8
13000	<i>Leucocuta sp</i>	MI	M	6	0.01	7	8
84450	<i>Polypedilum (Uresipedilum) flavum</i>	F	D	3830	7.73	6	8
93900	<i>Elimia sp</i>	MI	N	156	0.31	7	7
22001	<i>Coenagrionidae</i>	T	O	1	0	7	7
00401	<i>Spongillidae</i>	F	N	0	0	7	7
05800	<i>Caecidotea sp</i>	T	N	0	0	7	7
08601	<i>Hydrachnidia</i>	F	N	0	0	7	7
13561	<i>Maccaffertium pulchellum</i>	MI	M	736	1.49	6	7
13570	<i>Maccaffertium terminatum</i>	MI	M	332	0.67	6	7
13521	<i>Stenonema femoratum</i>	F	M	36	0.07	6	7
96900	<i>Ferrissia sp</i>	F	N	147	0.3	5	7
80410	<i>Cricotopus (C.) sp</i>	F	D	146	0.29	4	7
03360	<i>Plumatella sp</i>	F	N	5	0.01	4	7
85625	<i>Rheotanytarsus sp</i>	F	T	4976	10.05	2	7
68075	<i>Psephenus herricki</i>	MI	O	3	0.01	6	6
59415	<i>Nectopsyche exquisita</i>	MI	C	1	0	6	6
77120	<i>Ablabesmyia mallochi</i>	F	D	0	0	6	6
12200	<i>Isonychia sp</i>	MI	M	87	0.18	3	6
82130	<i>Thienemanniella similis</i>	MI	D	432	0.87	2	6
87540	<i>Hemerodromia sp</i>	F	D	183	0.37	1	6
53501	<i>Hydroptilidae</i>	F	C	10	0.02	5	5
43300	<i>Ranatra sp</i>	F	O	0	0	5	5
53400	<i>Protoptila sp</i>	I	C	0	0	5	5
84540	<i>Polypedilum (Tripodura) scalaenum</i>	F	D	0	0	5	5
85800	<i>Tanytarsus sp</i>	F	T	0	0	5	5
95100	<i>Physella sp</i>	T	N	0	0	5	5
77800	<i>Helopelopia sp</i>	F	D	85	0.17	4	5
84470	<i>Polypedilum (P.) illinoense</i>	T	D	3	0.01	4	5
11118	<i>Plauditus dubius</i>	MI	M	124	0.25	2	5
13510	<i>Maccaffertium exiguum</i>	MI	M	177	0.36	1	5
80420	<i>Cricotopus (C.) bicinctus</i>	T	D	68	0.14	1	5
52570	<i>Hydropsyche simulans</i>	MI	C	84	0.17	0	5
04615	<i>Actinobdella inequiannulata</i>	MT	N	0	0	4	4
06700	<i>Crangonyx sp</i>	MT	N	0	0	4	4
58505	<i>Helicopsyche borealis</i>	MI	C	0	0	4	4
83040	<i>Dicrotendipes neomodestus</i>	F	D	389	0.79	3	4

Appendix Table C-2 . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentangy River upstream from the Greenlawn Dam in 2020.

Taxa Code	Taxa Name	Ohio EPA Tolerance	Taxa Group	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
50315	<i>Chimarra obscura</i>	MI	C	16	0.03	3	4
34715	<i>Agnatina flavescens</i>	I	S	2	0	3	4
81231	<i>Nanocladius (N.) crassicornus</i> or <i>N.</i>	F	D	58	0.12	2	4
74100	<i>Simulium</i> sp	F	D	2	0	2	4
82220	<i>Tvetenia discoloripes</i> group	MI	D	110	0.22	1	4
01900	<i>Nemertea</i>	F	N	67	0.14	1	4
04666	<i>Helobdella papillata</i>	MT	N	1	0	3	3
08250	<i>Orconectes (Procericambarus) rusticus</i>	F	N	0	0	3	3
11650	<i>Procloeon</i> sp (w/ hindwing pads)	MI	M	0	0	3	3
13100	<i>Nixe</i> sp	MI	M	0	0	3	3
21200	<i>Calopteryx</i> sp	F	O	0	0	3	3
83300	<i>Glyptotendipes (G.)</i> sp	MT	D	5963	12.04	1	3
83051	<i>Dicrotendipes simpsoni</i>	T	D	434	0.88	1	3
53800	<i>Hydroptila</i> sp	F	C	242	0.49	1	3
80310	<i>Cardiocladius obscurus</i>	MI	D	69	0.14	1	3
01320	<i>Hydra</i> sp	F	N	109	0.22	0	3
51206	<i>Cyrrnellus fraternus</i>	F	C	72	0.15	0	3
77750	<i>Hayesomyia senata</i> or <i>Thienemanni</i>	F	D	37	0.07	0	3
78450	<i>Nilotanypus fimbriatus</i>	F	D	23	0.05	0	3
21300	<i>Hetaerina</i> sp	F	O	1	0	2	2
11200	<i>Callibaetis</i> sp	MT	M	0	0	2	2
18100	<i>Anthopotamus</i> sp	MI	M	0	0	2	2
18600	<i>Ephemera</i> sp	MI	M	0	0	2	2
42700	<i>Belostoma</i> sp	T	O	0	0	2	2
44501	<i>Corixidae</i>	F	O	0	0	2	2
60900	<i>Peltodytes</i> sp	MT	O	0	0	2	2
78655	<i>Procladius (Holotanypus)</i> sp	MT	D	0	0	2	2
82820	<i>Cryptochironomus</i> sp	F	D	0	0	2	2
93200	<i>Hydrobiidae</i>	F	N	0	0	2	2
96930	<i>Laevapex fuscus</i>	MT	N	0	0	2	2
81240	<i>Nanocladius (N.) distinctus</i>	MT	D	94	0.19	1	2
85840	<i>Tanytarsus sepp</i>	F	T	9	0.02	1	2
78750	<i>Rheopelopia paramaculipennis</i>	MI	D	5	0.01	1	2
52580	<i>Hydropsyche valanis</i>	MI	C	2	0	1	2
59160	<i>Ceraclea spongillovorax</i>	MI	C	1	0	1	2
68601	<i>Ancyronyx variegata</i>	F	O	1	0	1	2
85821	<i>Tanytarsus glabrescens</i> group sp 7	F	T	167	0.34	0	2
80440	<i>Cricotopus (C.) trifascia</i>	F	D	52	0.1	0	2
11020	<i>Acerpenna pygmaea</i>	MI	M	33	0.07	0	2
84040	<i>Parachironomus frequens</i>	F	D	24	0.05	0	2
82101	<i>Thienemanniella taurocapita</i>	MI	D	20	0.04	0	2
54160	<i>Ochrotrichia</i> sp	MI	C	11	0.02	0	2
00653	<i>Eunapius fragilis</i>	F	N	0	0	1	1
04682	<i>Placobdella montifera</i>	MT	N	0	0	1	1
04901	<i>Erpobdellidae</i>	MT	N	0	0	1	1
04930	<i>Erpobdella</i> sp	MT	N	0	0	1	1
04964	<i>Erpobdella microstoma</i>	MT	N	0	0	1	1
11150	<i>Labiobaetis propinquus</i>	MI	M	0	0	1	1
11670	<i>Procloeon viridoculare</i>	MI	M	0	0	1	1

Appendix Table C-2 . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentangy River upstream from the Greenlawn Dam in 2020.

Taxa Code	Taxa Name	Ohio EPA Tolerance	Taxa Group	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
18619	<i>Ephemera simulans</i>	MI	M	0	0	1	1
24107	<i>Nasiaeschna pentacantha</i>	MT	O	0	0	1	1
24900	<i>Gomphus sp</i>	F	O	0	0	1	1
25010	<i>Hagenius brevistylus</i>	F	O	0	0	1	1
26700	<i>Macromia sp</i>	MI	O	0	0	1	1
27307	<i>Epitheca (Epicordulia) princeps</i>	MT	O	0	0	1	1
45400	<i>Trichocorixa sp</i>	MT	O	0	0	1	1
49101	<i>Sisyridae</i>	F	O	0	0	1	1
59100	<i>Ceraclea sp</i>	MI	C	0	0	1	1
59407	<i>Nectopsyche candida</i>	MI	C	0	0	1	1
59520	<i>Oecetis cinerascens</i>	F	C	0	0	1	1
59700	<i>Triaenodes sp</i>	MI	C	0	0	1	1
65800	<i>Berosus sp</i>	MT	O	0	0	1	1
68700	<i>Dubiraphia sp</i>	F	O	0	0	1	1
71900	<i>Tipula sp</i>	F	D	0	0	1	1
72700	<i>Anopheles sp</i>	F	D	0	0	1	1
77355	<i>Clinotanytus pinguis</i>	MT	D	0	0	1	1
82121	<i>Thienemanniella lobapodema</i>	F	D	0	0	1	1
82710	<i>Chironomus (C.) sp</i>	MT	D	0	0	1	1
83158	<i>Endochironomus nigricans</i>	MT	D	0	0	1	1
84888	<i>Xenochironomus xenolabis</i>	F	D	0	0	1	1
85265	<i>Cladotanytarsus vanderwulpi group</i>	MI	T	0	0	1	1
85500	<i>Paratanytarsus sp</i>	F	T	0	0	1	1
85720	<i>Stempellinella fimbriata</i>	MI	T	0	0	1	1
86900	<i>Myxosargus sp</i>	MT	D	0	0	1	1
92615	<i>Cipangopaludina japonica</i>	MT	N	0	0	1	1
94400	<i>Fossaria sp</i>	MT	N	0	0	1	1
99240	<i>Lasmigona complanata</i>	MI	N	0	0	1	1
99680	<i>Leptodea fragilis</i>	MI	N	0	0	1	1
83000	<i>Dicrotendipes sp</i>	F	D	164	0.33	0	1
83050	<i>Dicrotendipes lucifer</i>	MT	D	82	0.17	0	1
52500	<i>Hydropsyche sp</i>		C	48	0.1	0	1
52590	<i>Hydropsyche venularis</i>	MI	C	43	0.09	0	1
52530	<i>Hydropsyche depravata group</i>	F	C	39	0.08	0	1
54200	<i>Orthotrichia sp</i>	F	C	32	0.06	0	1
68901	<i>Macronychus glabratus</i>	F	O	32	0.06	0	1
80360	<i>Corynoneura floridaensis</i>	MI	D	32	0.06	0	1
52801	<i>Potamyia flava</i>	MI	C	28	0.06	0	1
80370	<i>Corynoneura lobata</i>	F	D	18	0.04	0	1
96120	<i>Menetus (Micromenetus) dilatatus</i>	MT	N	18	0.04	0	1
03451	<i>Urnatella gracilis</i>	MI	N	16	0.03	0	1
78140	<i>Labrundinia pilosella</i>	F	D	16	0.03	0	1
82141	<i>Thienemanniella xena</i>	F	D	16	0.03	0	1
81250	<i>Nanocladius (N.) minimus</i>	F	D	9	0.02	0	1
84490	<i>Polypedilum (Cerobregma) ontario</i>	MI	D	9	0.02	0	1
52521	<i>Hydropsyche bidens or H. orris</i>	MI	C	5	0.01	0	1
80350	<i>Corynoneura sp</i>		D	4	0.01	0	1
13550	<i>Maccaffertium mexicanum integrum</i>	MI	M	3	0.01	0	1
81825	<i>Rheocricotopus (Psilocricotopus) ro</i>	F	D	3	0.01	0	1

Appendix Table C-2 . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentangy River upstream from the Greenlawn Dam in 2020.

Taxa Code	Taxa Name	Ohio EPA Tolerance	Taxa Group	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
84060	<i>Parachironomus pectinatellae</i>	MI	D	3	0.01	0	1
01200	<i>Cordylophora caspia</i>	MT	N	1	0	0	1
03000	<i>Ectoprocta</i>	F		1	0	0	1
03221	<i>Pectinatella magnifica</i>	F	N	1	0	0	1
05900	<i>Lirceus sp</i>	MT	N	1	0	0	1
11120	<i>Baetis flavistriga</i>	F	M	1	0	0	1
28208	<i>Erythemis simplicicollis</i>	MT	O	1	0	0	1
Total HD Numbers				49,538			
Total HD Taxa				77			
Total Qualitative Taxa				116			
Total Taxa				154			
Key:	Ohio EPA Tolerance Codes: I - Intolerant; MI - Moderately Intolerant; F - Facultative; MT - Moderately Tolerant; T - Tolerant						
	Taxa Group Codes: M - Mayflies; N - Non insects; O - Other Dipterans; C - Caddisflies; D - Dipterans; T - Tanytarsini Midge; S - Stoneflies						

Appendix Table C- . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in 2020.

Taxa Code	Taxa Name	Tolerance	Taxa Group	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
16700	<i>Tricorythodes sp</i>	MI	M	2845	1.66	21	21
22300	<i>Argia sp</i>	F	O	164	0.1	21	21
03600	<i>Oligochaeta</i>	T	N	9816	5.74	19	20
13570	<i>Maccaffertium terminatum</i>	MI	M	5334	3.12	17	20
17200	<i>Caenis sp</i>	F	M	354	0.21	20	20
52200	<i>Cheumatopsyche sp</i>	F	C	28439	16.63	18	20
83300	<i>Glyptotendipes (G.) sp</i>	MT	D	15519	9.07	18	20
84450	<i>Polypedilum (Uresipedilum) flavum</i>	F	D	10064	5.88	16	20
85625	<i>Rheotanytarsus sp</i>	F	T	17266	10.09	17	20
93900	<i>Elimia sp</i>	MI	N	246	0.14	19	20
96900	<i>Ferrissia sp</i>	F	N	258	0.15	15	20
01801	<i>Turbellaria</i>	F	N	252	0.15	15	19
05800	<i>Caecidotea sp</i>	T	N	205	0.12	19	19
11130	<i>Baetis intercalaris</i>	F	M	5242	3.06	19	19
52521	<i>Hydropsyche bidens or H. orris</i>	MI	C	20500	11.98	13	19
52801	<i>Potamyia flava</i>	MI	C	9605	5.62	16	19
69400	<i>Stenelmis sp</i>	F	O	345	0.2	19	19
13510	<i>Maccaffertium exiguum</i>	MI	M	6738	3.94	10	18
52570	<i>Hydropsyche simulans</i>	MI	C	13999	8.18	14	18
12200	<i>Isonychia sp</i>	MI	M	6172	3.61	13	17
13400	<i>Stenacron sp</i>	F	M	323	0.19	16	17
18100	<i>Anthopotamus sp</i>	MI	M	1	0	17	17
77750	<i>Hayesomyia senata or Thienemannimyia n</i>	F	D	2388	1.4	11	17
52430	<i>Ceratopsyche morosa group</i>	MI	C	503	0.29	9	16
59970	<i>Petrophila sp</i>	MI	O	110	0.06	16	16
00401	<i>Spongillidae</i>	F	N	0	0	15	15
51206	<i>Cyrnellus fraternus</i>	F	C	3853	2.25	9	14
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "re</i>	F	D	1379	0.81	1	14
22001	<i>Coenagrionidae</i>	T	O	0	0	13	13
74100	<i>Simulium sp</i>	F	D	420	0.25	10	13
77120	<i>Ablabesmyia mallochi</i>	F	D	89	0.05	13	13
82130	<i>Thienemanniella similis</i>	MI	D	1075	0.63	8	13
03360	<i>Plumatella sp</i>	F	N	12	0.01	9	12
06700	<i>Crangonyx sp</i>	MT	N	8	0	12	12
13550	<i>Maccaffertium mexicanum integrum</i>	MI	M	204	0.12	1	12
82220	<i>Tvetenia discoloripes group</i>	MI	D	349	0.2	2	12
13000	<i>Leucrocuta sp</i>	MI	M	0	0	11	11
53400	<i>Protophila sp</i>	I	C	0	0	11	11
53800	<i>Hydroptila sp</i>	F	C	139	0.08	9	11
59407	<i>Nectopsyche candida</i>	MI	C	1	0	11	11
68075	<i>Psephenus herricki</i>	MI	O	0	0	11	11
98600	<i>Sphaerium sp</i>	F	N	3	0	9	11
99680	<i>Leptodea fragilis</i>	MI	N	0	0	11	11
11123	<i>Labiobaetis dardanus</i>	MI	M	3	0	10	10
50315	<i>Chimarra obscura</i>	MI	C	371	0.22	10	10
68901	<i>Macronychus glabratus</i>	F	O	114	0.07	5	10
85800	<i>Tanytarsus sp</i>	F	T	144	0.08	10	10
97601	<i>Corbicula fluminea</i>	F	N	27	0.02	6	10
21300	<i>Hetaerina sp</i>	F	O	19	0.01	7	9
80420	<i>Cricotopus (C.) bicinctus</i>	T	D	69	0.04	7	9

Appendix Table C- . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in 2020.

81240	<i>Nanocladius (N.) distinctus</i>	MT	D	621	0.36	4	9
87540	<i>Hemerodromia sp</i>	F	D	132	0.08	0	9
04615	<i>Actinobdella inequiannulata</i>	MT	N	0	0	8	8
08601	<i>Hydrachnidia</i>	F	N	80	0.05	5	8
68601	<i>Ancyronyx variegata</i>	F	O	44	0.03	4	8
80410	<i>Cricotopus (C.) sp</i>	F	D	360	0.21	4	8
83040	<i>Dicrotendipes neomodestus</i>	F	D	259	0.15	7	8
99700	<i>Potamilus alatus</i>	MI	N	0	0	8	8
04666	<i>Helobdella papillata</i>	MT	N	0	0	7	7
82730	<i>Chironomus (C.) decorus group</i>	T	D	39	0.02	7	7
85265	<i>Cladotanytarsus vanderwulpi group sp 5</i>	MI	T	7	0	6	7
85821	<i>Tanytarsus glabrescens group sp 7</i>	F	T	349	0.2	1	7
95100	<i>Physella sp</i>	T	N	19	0.01	4	7
03451	<i>Urnatella gracilis</i>	MI	N	42	0.02	5	6
08250	<i>Orconectes (Procericambarus) rusticus</i>	F	N	0	0	6	6
11620	<i>Paracloeodes minutus</i>	MI	M	0	0	6	6
52580	<i>Hydropsyche valanis</i>	MI	C	74	0.04	6	6
77130	<i>Ablabesmyia rhamphe group</i>	MT	D	178	0.1	4	6
78140	<i>Labrundinia pilosella</i>	F	D	0	0	6	6
82820	<i>Cryptochironomus sp</i>	F	D	0	0	6	6
83050	<i>Dicrotendipes lucifer</i>	MT	D	385	0.23	2	6
84470	<i>Polypedilum (P.) illinoense</i>	T	D	45	0.03	6	6
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	F	D	47	0.03	4	6
85840	<i>Tanytarsus sepp</i>	F	T	98	0.06	4	6
99400	<i>Quadrula quadrula</i>	MI	N	0	0	6	6
06201	<i>Hyaella azteca</i>	F	N	0	0	5	5
13100	<i>Nixe sp</i>	MI	M	0	0	5	5
26700	<i>Macromia sp</i>	MI	O	0	0	5	5
78655	<i>Procladius (Holotanypus) sp</i>	MT	D	0	0	5	5
84040	<i>Parachironomus frequens</i>	F	D	426	0.25	4	5
84300	<i>Phaenopsectra obediens group</i>	F	D	6	0	4	5
84520	<i>Polypedilum (Tripodura) halterale group</i>	MT	D	74	0.04	4	5
01900	<i>Nemertea</i>	F	N	42	0.02	0	4
13561	<i>Maccaffertium pulchellum</i>	MI	M	92	0.05	3	4
21200	<i>Calopteryx sp</i>	F	O	0	0	4	4
24900	<i>Gomphus sp</i>	F	O	0	0	4	4
34715	<i>Agetina flavescens</i>	I	S	6	0	4	4
44501	<i>Corixidae</i>	F	O	0	0	4	4
45400	<i>Trichocorixa sp</i>	MT	O	0	0	4	4
53501	<i>Hydroptilidae</i>	F	C	137	0.08	1	4
59415	<i>Nectopsyche exquisita</i>	MI	C	1	0	4	4
80310	<i>Cardiocladius obscurus</i>	MI	D	0	0	4	4
93200	<i>Hydrobiidae</i>	F	N	0	0	4	4
99380	<i>Quadrula pustulosa pustulosa</i>	MI	N	0	0	4	4
01320	<i>Hydra sp</i>	F	N	17	0.01	1	3
03000	<i>Ectoprocta</i>	F		0	0	3	3
04901	<i>Erpobdellidae</i>	MT	N	2	0	3	3
04930	<i>Erpobdella sp</i>	MT	N	0	0	3	3
04964	<i>Erpobdella microstoma</i>	MT	N	1	0	3	3
11118	<i>Plauditus dubius</i>	MI	M	8	0	2	3
11600	<i>Paracloeodes fleeki</i>	MI	M	0	0	3	3
13540	<i>Maccaffertium mediopunctatum</i>	MI	M	4	0	2	3

Appendix Table C- . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in 2020.

34605	<i>Perlinella drymo</i>	MI	S	0	0	3	3
48410	<i>Corydalis cornutus</i>	MI	O	3	0	0	3
59160	<i>Ceraclea spongillovorax</i>	MI	C	0	0	3	3
60900	<i>Peltodytes sp</i>	MT	O	0	0	3	3
77800	<i>Helopelopia sp</i>	F	D	125	0.07	1	3
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	F	D	25	0.01	0	3
83310	<i>Glyptotendipes (Heynotendipes) chelonia</i>	MI	D	0	0	3	3
96930	<i>Laevapex fuscus</i>	MT	N	0	0	3	3
97710	<i>Dreissena polymorpha</i>	F	N	0	0	3	3
99580	<i>Obliquaria reflexa</i>	MI	N	0	0	3	3
03121	<i>Paludicella articulata</i>	MI	N	0	0	2	2
03337	<i>Hyalinella punctata</i>	MI	N	1	0	2	2
04664	<i>Helobdella stagnalis</i>	T	N	0	0	2	2
04750	<i>Myzobdella lugubris</i>		N	0	0	2	2
05900	<i>Lirceus sp</i>	MT	N	0	0	2	2
11119	<i>Plauditus dubius or P. virilis</i>	I	M	8	0	1	2
11200	<i>Callibaetis sp</i>	MT	M	0	0	2	2
11670	<i>Proclleon viridoculare</i>	MI	M	0	0	2	2
18600	<i>Ephemera sp</i>	MI	M	0	0	2	2
23600	<i>Aeshna sp</i>	MT	O	0	0	2	2
23909	<i>Boyeria vinosa</i>	F	O	0	0	2	2
24107	<i>Nasiaeschna pentacantha</i>	MT	O	0	0	2	2
27400	<i>Neurocordulia sp</i>	F	O	0	0	2	2
42700	<i>Belostoma sp</i>	T	O	0	0	2	2
45100	<i>Palmacorixa sp</i>	F	O	0	0	2	2
59500	<i>Oecetis sp</i>	F	C	24	0.01	0	2
68130	<i>Helichus sp</i>	F	O	0	0	2	2
68201	<i>Scirtidae</i>	F	O	0	0	2	2
68708	<i>Dubiraphia vittata group</i>	F	O	0	0	2	2
78450	<i>Nilotanypus fimbriatus</i>	F	D	19	0.01	1	2
78750	<i>Rheopelopia paramaculipennis</i>	MI	D	0	0	2	2
80360	<i>Corynoneura floridaensis</i>	MI	D	32	0.02	1	2
80430	<i>Cricotopus (C.) tremulus group</i>	MT	D	0	0	2	2
82885	<i>Cryptotendipes pseudotener</i>	F	D	0	0	2	2
83000	<i>Dicrotendipes sp</i>	F	D	94	0.05	0	2
83002	<i>Dicrotendipes modestus</i>	MT	D	0	0	2	2
83051	<i>Dicrotendipes simpsoni</i>	T	D	257	0.15	1	2
84000	<i>Parachironomus sp</i>	MT	D	83	0.05	0	2
85615	<i>Rheotanytarsus pellucidus</i>	MI	T	32	0.02	0	2
87501	<i>Empididae</i>	F	D	9	0.01	0	2
99640	<i>Truncilla donaciformis</i>	MI	N	0	0	2	2
00653	<i>Eunapius fragilis</i>	F	N	0	0	1	1
01200	<i>Cordylophora caspia</i>	MT	N	1	0	0	1
03221	<i>Pectinatella magnifica</i>	F	N	0	0	1	1
04601	<i>Glossiphoniidae</i>	MT	N	0	0	1	1
04661	<i>Helobdella elongata</i>	MT	N	0	0	1	1
04662	<i>Helobdella fusca</i>	T	N	0	0	1	1
04682	<i>Placobdella montifera</i>	MT	N	0	0	1	1
04685	<i>Placobdella ornata</i>	MT	N	0	0	1	1
04687	<i>Placobdella parasitica</i>	MT	N	0	0	1	1
06001	<i>Amphipoda</i>			32	0.02	0	1
11020	<i>Acerpenna pygmaea</i>	MI	M	46	0.03	0	1

Appendix Table C- . Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in 2020.

11650	<i>Proclleon sp (w/ hindwing pads)</i>	MI	M	0	0	1	1
11651	<i>Proclleon sp (w/o hindwing pads)</i>	MI	M	0	0	1	1
12924	<i>Heptagenia flavescens</i>	MI	M	0	0	1	1
13521	<i>Stenonema femoratum</i>	F	M	0	0	1	1
24501	<i>Gomphidae</i>	F	O	0	0	1	1
43300	<i>Ranatra sp</i>	F	O	0	0	1	1
50301	<i>Chimarra aterrima</i>	MI	C	0	0	1	1
52560	<i>Hydropsyche orris</i>	MI	C	985	0.58	1	1
59001	<i>Leptoceridae</i>		C	16	0.01	0	1
59100	<i>Ceraclea sp</i>	MI	C	0	0	1	1
64800	<i>Uvarus sp</i>	MT	O	0	0	1	1
65800	<i>Berosus sp</i>	MT	O	0	0	1	1
67750	<i>Sperchopsis tessellata</i>	F	O	0	0	1	1
67800	<i>Tropisternus sp</i>	T	O	0	0	1	1
72501	<i>Culicidae</i>	MT	D	0	0	1	1
77500	<i>Conchapelopia sp</i>	F	D	24	0.01	0	1
78650	<i>Procladius sp</i>	MT	D	0	0	1	1
79085	<i>Telopelopia okoboji</i>	MI	D	0	0	1	1
79100	<i>Thienemannimyia group</i>	F	D	12	0.01	0	1
80400	<i>Cricotopus sp</i>	F	D	0	0	1	1
80510	<i>Cricotopus (Isocladius) sylvestris group</i>	T	D	39	0.02	1	1
81270	<i>Nanocladius (N.) spinipennis</i>	F	D	76	0.04	0	1
82100	<i>Thienemanniella sp</i>		D	45	0.03	1	1
82121	<i>Thienemanniella lobapodema</i>	F	D	16	0.01	0	1
82141	<i>Thienemanniella xena</i>	F	D	12	0.01	0	1
82770	<i>Chironomus (C.) riparius group</i>	T	D	308	0.18	1	1
82824	<i>Cryptochironomus ponderosus</i>	F	D	0	0	1	1
82880	<i>Cryptotendipes sp</i>	F	D	0	0	1	1
83158	<i>Endochironomus nigricans</i>	MT	D	0	0	1	1
84010	<i>Parachironomus "abortivus" (sensu Simps</i>	MT	D	114	0.07	0	1
84039	<i>Parachironomus frequens group</i>		D	41	0.02	0	1
84100	<i>Paracladopelma sp</i>		D	0	0	1	1
84600	<i>Saetheria sp</i>	F	D	0	0	1	1
84700	<i>Stenochironomus sp</i>	F	D	10	0.01	0	1
85264	<i>Cladotanytarsus vanderwulpi group sp 4</i>	MI	T	0	0	1	1
98001	<i>Pisidiidae</i>		N	0	0	1	1
99100	<i>Pyganodon grandis</i>	F	N	0	0	1	1
99120	<i>Utterbackia imbecillis</i>	MI	N	1	0	0	1
99240	<i>Lasmigona complanata</i>	MI	N	0	0	1	1
99780	<i>Ligumia recta</i>	MI	N	0	0	1	1
99830	<i>Lampsilis fasciola</i>	MI	N	0	0	1	1
99880	<i>Lampsilis cardium</i>	MI	N	0	0	1	1
				Total Abundance	171,052		
				Number of Samples	21		
				HD Taxa	104		
				Qualitative Taxa	174		
				Total Taxa	196		
Key:	Ohio EPA Tolerance Codes: I - Intolerant; MI - Moderately Intolerant; F - Facultative; MT - Moderately Tolerant; T - Tolerant						
	Taxa Group Codes: M - Mayflies; N - Non insects; O - Other Dipterans; C - Caddisflies; D - Dipterans; T - Tanytarsini Midge; S - Stoneflies						

Appendix Table C-4. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentnag River upstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				1998-2003				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites
85625	Rheotanytarsus sp	F	679	5.91	1	3	313	2.92	2	5	101	0.23	2	4	1374	14.09	2	2	2034	2.66	7	6	14804	29.4	4	2	1906	1.74	4	2	34492	23.21	8	16
52200	Cheumatopsyche sp	F	2591	22.55	2	4	224	2.09	5	5	208	0.47	4	5	1116	11.44	3	3	20809	27.19	10	8	8960	17.79	4	2	10148	9.28	6	3	25643	17.25	18	18
83300	Glyptotendipes (G.) sp	MT	521	4.53	0	4	339	3.16	1	3	14688	33.47	5	8	24	0.25	1	2	10308	13.47	8	6	2828	5.62	2	1	30200	27.61	8	6	20992	14.12	5	8
52430	Ceratopsyche morosa group	MI	284	2.47	1	3	191	1.78	3	5	2	0	2	2	1116	11.44	3	3	1379	1.8	7	5	1726	3.43	4	2	538	0.49	6	3	13540	9.11	16	16
84450	Polypedilum (Uresipedilum) flavum	F	1446	12.58	0	4	846	7.89	5	5	562	1.28	7	7	1659	17.01	3	3	12083	15.79	9	7	8464	16.81	4	2	12276	11.22	6	3	12924	8.7	15	17
11130	Baetis intercalaris	F	0	0	0	0	0	0	0	0	0	0	0	0	772	7.91	3	3	1381	1.8	7	5	1628	3.23	4	2	4978	4.55	6	3	9458	6.36	17	17
03600	Oligochaeta	T	208	1.81	2	4	2739	25.53	5	5	6790	15.47	10	11	36	0.37	3	3	10508	13.73	12	9	384	0.76	4	2	8380	7.66	8	6	4729	3.18	19	19
01801	Turbellaria	F	179	1.56	2	4	836	7.79	5	5	4263	9.71	11	11	196	2.01	2	2	3628	4.74	13	9	3428	6.81	4	2	4676	4.27	10	5	3772	2.54	17	17
16700	Tricorythodes sp	MI	29	0.25	0	2	16	0.15	3	4	394	0.9	6	8	38	0.39	3	3	18	0.02	7	5	120	0.24	4	2	608	0.56	6	3	3378	2.27	16	18
83051	Dicortendipes simpsoni	T	48	0.42	0	1	0	0	1	1	5197	11.84	4	9	0	0	0	0	1345	1.76	0	4	0	0	0	0	478	0.44	4	2	2077	1.4	1	5
13561	Maccaffertium pulchellum	MI	0	0	0	0	110	1.03	4	5	405	0.92	3	3	407	4.17	3	3	255	0.33	8	6	1202	2.39	4	2	428	0.39	6	3	1553	1.04	14	15
51206	Cynnellus fraternus	F	47	0.41	0	3	1	0.01	0	1	3	0.01	0	2	0	0	0	0	0	0	0	0	134	0.27	0	1	48	0.04	0	2	1295	0.87	1	7
52560	Hydropsyche orris	MI	52	0.45	0	1	0	0	0	0	0	0	0	85	0.87	1	2	8	0.01	0	1	76	0.15	2	1	54	0.05	4	2	1194	0.8	2	4	
13400	Stenacron sp	F	53	0.46	4	4	142	1.32	5	5	982	2.24	9	9	111	1.14	3	3	437	0.57	6	7	204	0.41	4	2	272	0.25	6	3	1146	0.77	16	18
82220	Tvetenia discoloripes group	MI	0	0	0	0	12	0.11	1	1	0	0	0	0	0	0	0	248	0.32	2	2	380	0.75	0	1	0	0	0	0	890	0.6	4	9	
13570	Maccaffertium terminatum	MI	0	0	0	0	30	0.28	2	4	0	0	2	2	0	0	3	3	5	0.01	2	2	6	0.01	2	1	254	0.23	4	3	783	0.53	12	14
82130	Thienemanniella similis	MI	0	0	0	0	13	0.12	0	1	0	0	0	0	0	0	0	64	0.08	2	1	608	1.21	2	2	0	0	2	1	776	0.52	3	10	
50315	Chimarra obscura	MI	0	0	0	0	0	0	0	0	0	0	2	2	12	0.12	2	2	0	0	0	0	0	4	2	820	0.75	6	3	687	0.46	7	9	
83050	Dicortendipes lucifer	MT	301	2.62	0	3	25	0.23	1	2	445	1.01	0	4	47	0.48	0	1	87	0.11	0	1	0	0	0	0	148	0.14	0	2	592	0.4	1	3
80430	Cricotopus (C.) tremulus group	MT	211	1.84	0	4	25	0.23	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	591	0.4	2	5	
83040	Dicortendipes neomodestus	F	701	6.1	2	4	88	0.82	0	1	958	2.18	6	6	24	0.25	1	2	574	0.75	2	6	0	0	2	1	3786	3.46	4	3	491	0.33	7	8
01320	Hydra sp	F	71	0.62	0	2	533	4.97	0	3	2308	5.26	0	7	0	0	0	0	730	0.95	0	5	0	0	0	0	5016	4.59	2	4	457	0.31	0	7
53800	Hydroptila sp	F	33	0.29	0	4	19	0.18	0	2	68	0.15	3	4	17	0.17	3	3	306	0.4	2	3	708	1.41	2	1	66	0.06	2	2	454	0.31	7	9
81240	Nanocladius (N.) distinctus	MT	33	0.29	0	1	144	1.34	1	3	332	0.76	2	5	94	0.96	0	1	890	1.16	1	4	270	0.54	0	1	1462	1.34	2	3	442	0.3	3	7
77750	Hayesomyia senata or Thienemanimyia n	F	0	0	0	0	496	4.62	4	5	843	1.92	6	9	0	0	0	0	514	0.67	4	5	190	0.38	4	2	456	0.42	2	3	403	0.27	0	5
87540	Hemerodromia sp	F	0	0	0	0	0	0	0	0	0	0	0	43	0.44	2	3	8	0.01	3	2	2	0	2	1	2	0	1	401	0.27	2	10		
78450	Nilotanyopus fimbriatus	F	0	0	0	0	0	0	0	0	0	0	0	202	2.07	0	2	64	0.08	2	1	0	0	0	0	476	0.44	0	2	347	0.23	0	8	
96900	Ferrissia sp	F	14	0.12	2	3	339	3.16	4	4	44	0.1	5	7	168	1.72	2	2	882	1.15	5	8	0	0	2	1	428	0.39	6	4	326	0.22	8	12
11120	Baetis flavistriga	F	0	0	0	0	0	0	0	0	0	0	0	3	0.03	0	1	705	0.92	5	3	10	0.02	2	2	312	0.29	2	1	290	0.2	5	8	
52520	Hydropsyche bidens	MI	0	0	0	0	0	0	0	0	0	0	0	32	0.33	2	2	0	0	0	0	0	0	0	0	0	0	0	0	277	0.19	1	3	
80410	Cricotopus (C.) sp	F	42	0.37	0	1	195	1.82	2	4	107	0.24	2	4	0	0	1	1	432	0.56	5	4	762	1.51	2	1	964	0.88	4	3	258	0.17	8	12
52570	Hydropsyche simulans	MI	73	0.64	0	1	0	0	0	0	0	0	0	14	0.14	1	2	0	0	0	0	4	0.01	0	1	8	0.01	2	1	255	0.17	3	10	
77800	Helopelopia sp	F	0	0	0	0	75	0.7	3	3	12	0.03	4	4	94	0.96	2	2	32	0.04	4	3	0	0	4	2	70	0.06	2	1	230	0.15	8	11
85821	Tanytarsus glabrescens group sp 7	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0.05	0	1	380	0.75	0	1	620	0.57	2	2	228	0.15	2	4
83000	Dicortendipes sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205	0.14	1	3	
81231	Nanocladius (N.) crassicornus or N. (N.) *re	F	0	0	0	0	0	0	0	0	0	0	0	0	1	1	134	0.18	0	2	404	0.8	2	1	1740	1.59	2	3	189	0.13	4	9		
13510	Maccaffertium exiguum	MI	0	0	0	0	0	0	0	0	0	0	1	1	49	0.5	1	2	0	0	0	0	20	0.04	2	1	50	0.05	2	1	181	0.12	1	6
03360	Plumatella sp	F	52	0.45	2	4	32	0.3	4	5	11	0.03	4	7	5	0.05	3	3	9	0.01	4	4	2	0	0	1	114	0.1	4	5	179	0.12	10	17
01900	Nemertea	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0.04	0	1	0	0	0	0	0	0	0	0	156	0.1	2	8	
77130	Ablabesmyia rhampho group	MT	0	0	0	0	0	0	1	1	24	0.05	1	2	0	0	1	1	160	0.21	0	3	134	0.27	2	1	484	0.44	2	3	156	0.1	3	3
93900	Elimia sp	MI	4	0.03	2	2	132	1.23	5	5	1867	4.25	9	9	6	0.06	3	3	187	0.24	10	7	0	0	2	1	2	0	6	3	156	0.1	10	10
52801	Potamyia flava	MI	9	0.08	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	141	0.09	0	2	
69400	Stenelmis sp	F	6	0.05	4	4	65	0.61	5	5	35	0.08	10	11	19	0.19	3	3	356	0.47	9	7	138	0.27	4	2	194	0.18	8	5	132	0.09	17	17
11118	Plauditus dubius	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124	0.08	2	5	
80370	Corynoneura lobata	F	0	0	0	0	4	0.04	0	1	336	0.77	1	1	4	0.04	0	1	17	0.02	0	2	32	0.06	0	1	464	0.42	0	2	114	0.08	1	5
11020	Acerpenna pygmaea	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	0.07	4	7	
80420	Cricotopus (C.) bicinctus	T	58	0.5	0	2	313	2.92	4	4	385	0.88	7	7	0	0	2	2	1	0	8	6	190	0.38	2	1	0	0	2	1	109	0.07	3	8
59970	Petrophila sp	MI	4	0.03	2	2	0	0																										

Appendix Table C-4. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River and the lower Olentnag River upstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				1998-2003				2004-2007				2008-2013				2014-2020					
			HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites		
52540	Hydropsyche dicantha	MI	0	0	0	0	17	0.16	0	3	0	0	0	0	0	0	0	144	0.19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53400	Protoptila sp	I	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	1	0	0	2	1	0	0	2	1	0	0	8	8
54300	Oxyethira sp	F	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
57400	Neophylax sp	MI	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	
58505	Helicopsyche borealis	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	0	2	1	0	0	0	0	0	0	0	0	6	6		
59001	Leptoceridae		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0.06	0	1	0	0	0	0	0	0	0	0	0	0	
59140	Ceraclea maculata	MI	0	0	0	0	0	0	0	0	0	0	0	8	0.08	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
59150	Ceraclea resurgens group	F	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
59170	Ceraclea tarsipunctata		0	0	0	0	1	0.01	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
59300	Mystacides sp	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
59310	Mystacides sepulchralis	MI	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	1	1	1	
59400	Nectopsyche sp	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
59407	Nectopsyche candida	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
59500	Oecetis sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	6	0.01	0	1	0	0	0	0	0	0	0	
59520	Oecetis cinerascens	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0.13	2	1	0	0	0	0	0	0	0	0	1	1	1	
59700	Trienodes sp	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		
60900	Peltodytes sp	MT	0	0	0	0	1	0.01	2	2	0	3	3	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	
65800	Berosus sp	MT	0	0	0	0	0	0	0	3	0.01	6	8	0	0	0	0	0	2	1	2	0	0	1	0	0	2	1	0	0	3	3	3	3		
66500	Enochrus sp	MT	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67000	Helophorus sp	MT	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67300	Hydrochus sp	MT	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67400	Hydrophilus sp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67700	Paracymus sp	MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67800	Tropisternus sp	T	0	0	0	0	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	4	2	0	0	0	1	1	1	1	
68201	Scirtidae	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	
68700	Dubiraphia sp	F	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
68707	Dubiraphia quadrinotata	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
68708	Dubiraphia vittata group	F	0	0	0	0	1	0.01	2	3	2	0	1	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
71100	Hexatoma sp	MI	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	
71300	Limonia sp	F	0	0	0	0	0	0	0	4	0.01	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	
71900	Tipula sp	F	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	2	1	0	0	0	0	0	0	2	1	0	0	3	3	3	3		
72340	Dixella sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
72700	Anopheles sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3	3	3		
74501	Ceratopogonidae	T	4	0.03	0	1	4	0.04	1	2	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
77100	Ablabesmyia sp		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0.04	0	1	0	0	0	0	0	0	0	0	
77115	Ablabesmyia janta	F	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
77120	Ablabesmyia mallochi	F	0	0	1	1	11	0.1	1	2	67	0.15	5	7	24	0.25	2	2	0	0	2	2	0	2	1	344	0.31	4	4	0	0	11	11	11		
77355	Clinotanypus pinguis	MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	
77500	Conchapelopia sp	F	0	0	0	0	141	1.31	1	5	0	2	2	0	0	0	0	32	0.04	0	1	0	0	0	338	0.31	2	3	0	0	1	1	1	1		
77740	Hayesomyia senata	F	0	0	0	0	0	0	0	0	0	0	0	850	8.71	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78130	Labrundinia neopilosella		0	0	0	0	0	0	0	107	0.24	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78200	Larsia sp	MT	0	0	0	0	0	0	0	6	0.01	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78350	Meropelopia sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	62	0.06	2	1	0	0	1	1	1	1		
78400	Natarsia sp	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0.07	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78600	Pentaneura inconspicua	F	23	0.2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
78650	Procladius sp	MT	0	0	0	0	0	0	0	159	0.36	3	3	0	0	0	0	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78655	Procladius (Holotanypus) sp	MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	2	1	0	0	10	10	10	10		
79020	Tanypus neopunctipennis	T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
79085	Telopelopia okoboji	MI	0	0	0	0	12	0.11	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79100	Thienemannimyia group	F	1185	10.31	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
80354	Corynoneura doriceni		0	0	0	0	0	0	0	4	0.01	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
80510	Cricotopus (Isocladius) sylvestris group	T	0																																	

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020							
			HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites				
85625	<i>Rheotanytarsus sp</i>	F	638	1.98	1	7	66930	38.19	8	8	6160	1.78	13	18	26849	11.90	15	17	6898	7.33	10	5	59284	11.71	34	17	59008	16.30	34	33				
52200	<i>Cheumatopsyche sp</i>	F	1009	3.13	5	7	2463	1.41	5	6	17441	5.04	19	22	43000	19.06	19	19	11296	12.00	10	5	97350	19.22	34	17	51901	14.33	35	33				
83300	<i>Glyptotendipes (G.) sp</i>	MT	373	1.16	1	7	20308	11.59	8	8	1E+05	42.88	29	31	17432	7.73	22	24	12710	13.50	10	5	16588	3.28	32	17	31812	8.79	34	32				
84450	<i>Polypedium (Uresipedillum) flavum</i>	F	2954	9.16	7	9	24832	14.17	10	10	20248	5.85	27	29	22492	9.97	18	18	15210	16.16	10	5	57354	11.33	34	17	31588	8.72	33	33				
52570	<i>Hydropsyche simulans</i>	MI	2282	7.08	5	8	858	0.49	6	7	2394	0.69	15	17	4411	1.96	14	17	6908	7.34	8	5	14154	2.80	32	17	30857	8.52	32	31				
52801	<i>Potamyia flava</i>	MI	294	0.91	0	6	430	0.25	3	5	6400	1.85	13	19	15958	7.07	10	12	2554	2.71	6	3	42638	8.42	30	15	25895	7.15	32	32				
52560	<i>Hydropsyche orris</i>	MI	355	1.10	2	6	3744	2.14	5	8	13013	3.76	17	20	14500	6.43	17	19	12656	13.44	10	5	32434	6.40	28	16	24246	6.70	22	23				
11130	<i>Baetis intercalaris</i>	F	0	0.00	0	0	0	0.00	0	0	1281	0.37	3	5	9161	4.06	11	14	3722	3.95	10	5	18662	3.69	34	17	14328	3.96	36	32				
03600	<i>Oligochaeta</i>	T	411	1.28	2	9	5919	3.38	10	10	32154	9.28	28	30	17387	7.71	17	22	1234	1.31	10	5	61606	12.17	30	17	14200	3.92	32	32				
13570	<i>Maccaffertium terminatum</i>	MI	0	0.00	0	0	569	0.32	4	6	3098	0.89	17	18	2061	0.91	9	11	1236	1.31	8	4	3650	0.72	26	13	12291	3.39	34	33				
13510	<i>Maccaffertium exiguum</i>	MI	0	0.00	0	0	104	0.06	2	3	475	0.14	5	11	2572	1.14	9	12	1532	1.63	8	4	4136	0.82	20	13	11052	3.05	23	30				
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	F	0	0.00	0	0	15042	8.58	10	10	24031	6.94	28	29	8714	3.86	9	11	3236	3.44	8	5	15146	2.99	26	15	6714	1.85	23	29				
12200	<i>Isonychia sp</i>	MI	5	0.02	0	2	42	0.02	4	4	2099	0.61	13	14	3486	1.55	8	9	118	0.13	0	3	354	0.07	10	8	6444	1.78	17	24				
52521	<i>Hydropsyche bidens or H. orris</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	4754	1.31	7	10
74100	<i>Simulium sp</i>	F	3973	12.33	5	9	1310	0.75	9	9	229	0.07	10	12	855	0.38	12	14	214	0.23	6	3	2580	0.51	28	14	4386	1.21	29	27				
16700	<i>Tricorythodes sp</i>	MI	437	1.36	4	6	1393	0.79	6	6	5172	1.49	20	22	2060	0.91	14	15	1734	1.84	10	5	11714	2.31	34	17	4235	1.17	38	34				
51206	<i>Cynnellus fraternus</i>	F	0	0.00	0	0	579	0.33	3	5	226	0.07	5	10	99	0.04	3	6	1480	1.57	6	4	1152	0.23	18	13	3459	0.96	13	19				
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	F	0	0.00	0	0	0	0.00	0	0	285	0.08	1	4	613	0.27	2	7	750	0.80	4	3	5822	1.15	12	9	2488	0.69	5	20				
13561	<i>Maccaffertium pulchellum</i>	MI	0	0.00	0	0	58	0.03	1	3	511	0.15	5	7	1138	0.50	2	6	1562	1.66	4	4	2748	0.54	12	11	1781	0.49	11	16				
82220	<i>Tvetenia discoloripes group</i>	MI	0	0.00	0	0	0	0.00	0	0	17	0.00	0	1	0	0.00	0	0	0	0.00	0	0	142	0.03	4	3	1658	0.46	4	15				
52580	<i>Hydropsyche valanis</i>	MI	903	2.80	6	9	266	0.15	2	2	778	0.22	10	13	1169	0.52	10	14	124	0.13	2	2	2394	0.47	14	8	1528	0.42	14	15				
81240	<i>Nanocladius (N.) distinctus</i>	MT	0	0.00	0	0	980	0.56	4	7	2479	0.72	3	8	3477	1.54	5	8	2322	2.47	4	3	15686	3.10	16	10	1460	0.40	6	13				
82130	<i>Thienemannella similis</i>	MI	0	0.00	0	0	0	0.00	1	1	234	0.07	7	10	1579	0.70	6	14	400	0.42	2	3	1632	0.32	8	10	1455	0.40	17	26				
83050	<i>Dicortendipes lucifer</i>	MT	40	0.12	0	2	2633	1.50	4	6	1394	0.40	2	9	1453	0.64	5	6	134	0.14	0	1	1232	0.24	4	2	1085	0.30	4	10				
52430	<i>Ceratopsyche morosa group</i>	MI	121	0.38	2	6	150	0.09	3	4	268	0.08	8	10	406	0.18	2	7	660	0.70	2	5	2846	0.56	22	14	1034	0.29	16	26				
52520	<i>Hydropsyche bidens</i>	MI	24	0.07	0	1	1042	0.59	3	3	2691	0.78	8	9	6036	2.68	14	19	90	0.10	2	2	4360	0.86	28	16	826	0.23	11	22				
79100	<i>Thienemannimyia group</i>	F	4815	14.94	5	9	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	812	0.22	1	2				
50315	<i>Chimarra obscura</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.00	4	4	11	0.00	1	4	8	0.01	0	1	164	0.03	10	8	592	0.16	19	18				
01801	<i>Turbellaria</i>	F	237	0.74	3	7	2149	1.23	9	9	14709	4.25	27	29	415	0.18	19	22	478	0.51	8	5	2404	0.47	26	17	563	0.16	33	32				
83051	<i>Dicortendipes simpsoni</i>	T	100	0.31	0	2	3282	1.87	2	4	10591	3.06	8	13	1248	0.55	2	6	400	0.42	0	1	1828	0.36	4	5	509	0.14	1	5				
83040	<i>Dicortendipes neomodestus</i>	F	0	0.00	1	1	151	0.09	2	2	534	0.15	8	10	233	0.10	8	10	134	0.14	2	2	874	0.17	22	12	489	0.14	17	17				
85821	<i>Tanytarsus glabrescens group sp 7</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	160	0.17	0	1	90	0.02	4	3	472	0.13	3	11				
13400	<i>Stenacron sp</i>	F	321	1.00	7	8	68	0.04	7	8	301	0.09	16	16	48	0.02	6	8	0	0.00	8	4	4	0.00	22	11	469	0.13	26	28				
69400	<i>Stenelmis sp</i>	F	39	0.12	4	5	0	0.00	0	0	302	0.09	28	29	456	0.20	20	20	264	0.28	10	5	1868	0.37	32	17	431	0.12	36	32				
80410	<i>Cricotopus (C.) sp</i>	F	37	0.11	0	1	0	0.00	1	1	1944	0.56	12	15	704	0.31	9	14	412	0.44	4	3	2708	0.53	22	12	423	0.12	15	17				
53800	<i>Hydroptila sp</i>	F	28	0.09	1	5	361	0.21	6	7	783	0.23	9	12	346	0.15	11	15	358	0.38	6	4	618	0.12	26	15	313	0.09	10	14				
82770	<i>Chironomus (C.) riparius group</i>	T	74	0.23	1	1	0	0.00	0	0	2547	0.74	4	4	66	0.03	5	5	0	0.00	0	0	0	0.00	0	0	308	0.09	1	1				
85615	<i>Rheotanytarsus pellucidus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	140	0.15	2	2	732	0.14	2	1	288	0.08	3	6				
87540	<i>Hemerodromia sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	538	0.24	4	10	64	0.07	0	1	456	0.09	2	6	282	0.08	4	17				
84300	<i>Phaenopsectra obediens group</i>	F	4	0.01	0	1	0	0.00	0	0	17	0.00	4	4	0	0.00	4	4	0	0.00	4	2	114	0.02	16	9	279	0.08	18	17				
84040	<i>Parachironomus frequens</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	269	0.12	7	9	0	0.00	4	2	1094	0.22	10	6	265	0.07	3	4				
68901	<i>Macronychus glabratus</i>	F	9	0.03	0	3	7	0.00	2	4	38	0.01	2	7	30	0.01	5	7	6	0.01	4	3	102	0.02	10	7	212	0.06	10	16				
96900	<i>Ferrissia sp</i>	F	379	1.18	5	7	25	0.01	9	9																								

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983			1984-1987			1988-1993			1994-1997			2004-2007			2008-2013			2014-2020									
			HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites				
01320	<i>Hydra sp</i>	F	168	0.52	0	5	556	0.32	0	6	558	0.16	0	7	40	0.02	0	2	64	0.07	0	1	354	0.07	2	4	131	0.04	0	5
78450	<i>Nilotanytus fimbriatus</i>	F	0	0.00	0	0	32	0.02	0	1	0	0.00	0	0	33	0.01	0	2	54	0.06	0	1	16	0.00	0	1	124	0.03	0	4
84010	<i>Parachironomus "abortivus" (sensu Simpson & Bode, 1980)</i>	MT	0	0.00	0	0	88	0.05	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	114	0.03	2	3
80420	<i>Cricotopus (C.) bicinctus</i>	T	2052	6.37	4	7	3801	2.17	9	9	3163	0.91	18	20	813	0.36	15	15	104	0.11	0	1	3478	0.69	12	6	113	0.03	12	13
84520	<i>Polypedium (Tripodura) halterale group</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	2	2	0	0.00	0	0	0	0.00	8	4	98	0.03	7	6
59970	<i>Petrophila sp</i>	MI	0	0.00	0	0	4	0.00	1	1	16	0.00	2	3	0	0.00	2	2	20	0.02	10	5	128	0.03	26	13	94	0.03	27	24
83000	<i>Dicratendipes sp</i>	F	0	0.00	0	0	0	0.00	0	0	78	0.02	0	1	0	0.00	0	0	522	0.55	0	2	0	0.00	2	1	94	0.03	1	3
16324	<i>Teloganopsis deficiens</i>	I	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	2	0.00	0	1	2	0.00	0	1	88	0.02	0	2
77120	<i>Ablabesmyia mallochi</i>	F	70	0.22	2	2	0	0.00	4	4	423	0.12	13	15	33	0.01	12	13	0	0.00	6	3	0	0.00	26	13	84	0.02	20	20
03360	<i>Plumatella sp</i>	F	10	0.03	0	4	18	0.01	7	7	86	0.02	17	22	41	0.02	21	23	76	0.08	8	5	52	0.01	26	16	83	0.02	22	24
84000	<i>Parachironomus sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	356	0.07	0	2	83	0.02	0	2
84700	<i>Stenochironomus sp</i>	F	0	0.00	0	0	0	0.00	0	0	70	0.02	0	4	0	0.00	2	2	180	0.19	0	2	0	0.00	2	1	82	0.02	0	2
81270	<i>Nanocladius (N.) spinipennis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	76	0.02	0	1
68601	<i>Ancyronyx variegata</i>	F	15	0.05	0	4	5	0.00	2	3	25	0.01	2	6	10	0.00	8	9	0	0.00	2	1	84	0.02	4	5	74	0.02	9	14
80740	<i>Eukiefferiella claripennis group</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	72	0.02	0	1
08601	<i>Hydrachnidia</i>	F	0	0.00	0	0	168	0.10	1	3	144	0.04	1	6	400	0.18	1	9	0	0.00	0	0	96	0.02	0	2	64	0.02	4	6
82121	<i>Thienemanniella lobapodema</i>	F	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	64	0.01	2	2	64	0.02	1	1
84470	<i>Polypedium (P.) illinoense</i>	T	178	0.55	4	7	0	0.00	8	8	166	0.05	18	18	223	0.10	16	17	104	0.11	2	2	826	0.16	24	12	63	0.02	11	12
01900	<i>Nemertea</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	8	0.00	1	2	0	0.00	0	0	0	0.00	0	0	49	0.01	1	5
97601	<i>Corbicula fluminea</i>	F	9	0.03	0	2	2	0.00	7	7	72	0.02	15	18	5	0.00	13	15	0	0.00	8	4	20	0.00	20	10	48	0.01	19	19
11020	<i>Acerpenna pygmaea</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	46	0.01	0	1
85800	<i>Tanytarsus sp</i>	F	0	0.00	0	0	0	0.00	0	0	14	0.00	1	2	0	0.00	2	2	40	0.04	0	1	82	0.02	8	5	45	0.01	13	13
99400	<i>Quadrula quadrula</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	6	6	0	0.00	4	2	0	0.00	12	6	45	0.01	9	8
82100	<i>Thienemanniella sp</i>	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	45	0.01	1	1	
03451	<i>Umatella gracilis</i>	MI	2	0.01	0	2	1	0.00	2	2	7	0.00	3	7	2	0.00	2	3	0	0.00	2	1	8	0.00	10	8	42	0.01	6	7
31800	<i>Taeniopteryx sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	40	0.01	1	1
82141	<i>Thienemanniella xena</i>	F	0	0.00	0	0	0	0.00	1	1	105	0.03	0	2	128	0.06	0	2	0	0.00	0	0	0	0.00	2	1	40	0.01	0	2
80510	<i>Cricotopus (Isocladius) sylvestris group</i>	T	0	0.00	0	0	0	0.00	1	1	586	0.17	1	1	79	0.04	6	7	0	0.00	0	0	0	0.00	0	0	39	0.01	1	1
53501	<i>Hydroptilidae</i>	F	0	0.00	0	0	0	0.00	0	0	21	0.01	2	3	0	0.00	1	1	0	0.00	0	0	34	0.01	0	1	34	0.01	3	6
82820	<i>Cryptochironomus sp</i>	F	0	0.00	1	1	0	0.00	3	3	0	0.00	11	11	0	0.00	7	7	0	0.00	4	2	290	0.06	16	8	32	0.01	13	11
78750	<i>Rheopelopia paramaculipennis</i>	MI	0	0.00	0	0	792	0.45	8	8	155	0.04	6	6	0	0.00	1	1	54	0.06	0	1	494	0.10	4	5	32	0.01	2	3
78100	<i>Labrundinia sp</i>	F	12	0.04	0	1	72	0.04	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	32	0.01	0	1
06001	<i>Amphipoda</i>	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0.00	0	0	32	0.01	0	1
78600	<i>Pentaneura inconspicua</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	32	0.01	0	1
80351	<i>Corynoneura caudicula</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	32	0.01	0	1
80310	<i>Cardiocladius obscurus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	1	1	0	0.00	0	0	180	0.04	4	2	29	0.01	5	5
77800	<i>Helapelopia sp</i>	F	0	0.00	0	0	0	0.00	0	0	111	0.03	1	1	43	0.02	1	3	0	0.00	0	0	0	0.00	0	0	26	0.01	0	1
77500	<i>Conchapelopia sp</i>	F	0	0.00	0	0	0	0.00	0	0	16	0.00	0	1	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	24	0.01	0	1
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	F	19	0.06	0	1	0	0.00	0	0	22	0.01	0	2	24	0.01	0	1	0	0.00	0	0	0	0.00	2	1	24	0.01	0	1
98600	<i>Sphaerium sp</i>	F	6	0.02	0	2	0	0.00	7	7	10	0.00	14	14	2	0.00	8	9	0	0.00	0	0	32	0.01	16	8	17	0.00	17	16
78140	<i>Labrundinia pilosella</i>	F	0	0.00	0	0	0	0.00	2	2	0	0.00	1	1	103	0.05	4	6	0	0.00	0	0	90	0.02	4	3	16	0.00	4	4
18100	<i>Anthopotamus sp</i>	MI	0	0.00	1	1	0	0.00	2	2	0	0.00	7	7	0	0.00	0	0	0	0.00	0	0	0	0.00	12	6	9	0.00	34	30
11119	<i>Plauditus dubius or P. virilis</i>	I	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	14	0.00	4	3	9	0.00	7	7
51300	<i>Neureclipsis sp</i>	MI	0	0.00	0	0	84	0.05	4	5	190	0.05	8	12	329	0.15	11	11	80	0.08	6	3	638	0.13	22	11	8	0.00	1	2
59500	<i>Oecetis sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	32	0.01	1	2	192	0.20	2	2	0	0.00	0	0	8	0.00	0	1
34700	<i>Agnatina capitata complex</i>																													

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites
21300	<i>Hetaerina sp</i>	F	0	0.00	0	0	0	0.00	1	1	4	0.00	4	7	0	0.00	3	3	0	0.00	0	0	0	0.00	12	6	2	0.00	6	6
04901	<i>Erpobdellidae</i>	MT	0	0.00	2	2	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	2	0.00	3	3
87501	<i>Empididae</i>	F	174	0.54	1	9	460	0.26	1	6	278	0.08	6	12	4	0.00	1	4	0	0.00	0	0	2	0.00	0	1	2	0.00	0	2
93200	<i>Hydrobiidae</i>	F	0	0.00	0	0	0	0.00	1	1	0	0.00	4	4	0	0.00	1	1	2	0.00	0	1	140	0.03	8	4	1	0.00	5	6
11650	<i>Proclaeon sp (w/ hindwing pads)</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	3	3
24900	<i>Gomphus sp</i>	F	0	0.00	0	0	0	0.00	3	3	0	0.00	4	4	1	0.00	8	8	0	0.00	4	2	0	0.00	6	3	1	0.00	2	3
59415	<i>Nectopsyche exquisita</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	2	2
68700	<i>Dubiraphia sp</i>	F	8	0.02	0	1	0	0.00	0	0	0	0.00	1	1	1	0.00	2	3	0	0.00	0	0	0	0.00	0	0	1	0.00	1	2
03221	<i>Pectinatella magnifica</i>	F	0	0.00	0	0	0	0.00	0	0	2	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	1	2
13500	<i>Maccaffertium sp</i>	MI	0	0.00	0	0	0	0.00	0	0	13	0.00	1	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	1	1
18700	<i>Hexagenia sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	1	1
48410	<i>Corydalus cornutus</i>	MI	0	0.00	1	1	6	0.00	4	4	15	0.00	9	13	23	0.01	7	11	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1
03040	<i>Fredericella sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	3	3	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1
06700	<i>Crangonyx sp</i>	MT	5	0.02	2	3	0	0.00	3	3	0	0.00	6	6	0	0.00	10	10	0	0.00	4	2	0	0.00	18	9	0	0.00	25	21
00401	<i>Spongillidae</i>	F	0	0.00	1	1	0	0.00	0	0	0	0.00	7	7	0	0.00	6	6	0	0.00	4	2	0	0.00	14	7	0	0.00	24	23
22001	<i>Coenagrionidae</i>	T	24	0.07	2	4	0	0.00	9	9	60	0.02	18	19	0	0.00	12	12	0	0.00	6	3	0	0.00	28	14	0	0.00	19	18
68075	<i>Psephenus herricki</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.00	6	6	0	0.00	4	4	0	0.00	2	1	2	0.00	10	5	0	0.00	15	13
78655	<i>Procladius (Holotanypus) sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	4	0	0.00	2	1	0	0.00	14	7	0	0.00	14	13
99680	<i>Leptodea fragilis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	13	13	0	0.00	4	2	0	0.00	26	13	0	0.00	13	11
53400	<i>Protophila sp</i>	I	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	2	1	0	0.00	16	8	0	0.00	13	10
11670	<i>Proclaeon viridoculare</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	2	1	0	0.00	8	4	0	0.00	13	13
99700	<i>Potamilus alatus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	12	6	0	0.00	12	11
06201	<i>Hyalella azteca</i>	F	0	0.00	1	1	0	0.00	6	6	0	0.00	5	5	0	0.00	4	4	0	0.00	2	1	0	0.00	16	8	0	0.00	11	11
13100	<i>Nixe sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	5	5	0	0.00	2	1	0	0.00	6	3	0	0.00	10	10
34605	<i>Perlinella drymo</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	10	10
04615	<i>Actinobdella inequiannullata</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	9	9
04666	<i>Helobdella papillata</i>	MT	0	0.00	0	0	6	0.00	9	9	12	0.00	10	13	1	0.00	5	5	0	0.00	6	3	0	0.00	28	14	0	0.00	8	8
45400	<i>Trichocorixa sp</i>	MT	0	0.00	0	0	0	0.00	6	6	0	0.00	18	18	0	0.00	12	12	0	0.00	4	2	0	0.00	18	9	0	0.00	8	7
08250	<i>Orconectes (Procericambarus) rusticus</i>	F	0	0.00	0	0	0	0.00	5	5	0	0.00	19	19	0	0.00	13	13	0	0.00	2	1	0	0.00	18	9	0	0.00	8	8
67800	<i>Tropisternus sp</i>	T	0	0.00	1	1	0	0.00	3	3	0	0.00	16	16	0	0.00	15	15	0	0.00	4	2	0	0.00	16	8	0	0.00	8	8
68708	<i>Dubiraphia vittata group</i>	F	2	0.01	0	1	8	0.00	0	1	0	0.00	1	1	0	0.00	3	3	0	0.00	0	0	0	0.00	4	2	0	0.00	7	7
44501	<i>Corixidae</i>	F	0	0.00	2	2	0	0.00	1	1	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	7	7
60900	<i>Peltodytes sp</i>	MT	0	0.00	0	0	0	0.00	6	6	0	0.00	18	18	0	0.00	10	10	0	0.00	0	0	0	0.00	8	4	0	0.00	6	5
11620	<i>Paracloeodes minutus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	4	2	0	0.00	6	4
99380	<i>Quadrula pustulosa pustulosa</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	6	4
43300	<i>Ranatra sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	4	4	0	0.00	2	1	0	0.00	6	3	0	0.00	5	5
49101	<i>Sisyridae</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	5	5
00653	<i>Eunapius fragilis</i>	F	0	0.00	0	0	0	0.00	4	4	0	0.00	3	3	0	0.00	5	5	0	0.00	2	1	0	0.00	2	1	0	0.00	5	5
99660	<i>Truncilla truncata</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	2	1	0	0.00	20	10	0	0.00	4	4
68130	<i>Helichus sp</i>	F	0	0.00	0	0	1	0.00	3	3	1	0.00	5	6	0	0.00	6	6	0	0.00	2	1	0	0.00	10	5	0	0.00	4	3
99580	<i>Obliquaria reflexa</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	6	3	0	0.00	4	3
65800	<i>Berosus sp</i>	MT	4	0.01	0	3	42	0.02	8	8	486	0.14	24	24	0	0.00	20	20	0	0.00	4	2	0	0.00	16	8	0	0.00	3	2
68201	<i>Scirtidae</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	3	2
11200	<i>Callibaetis sp</i>	MT	0	0.00	0	0	8	0.00	2	2	0	0.00	5	5	0	0.00	3	3	0	0.00	2	1	0	0.00	2	1	0	0.00	3	3
45100	<i>Palmaricorixa sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	1	1	0	0.00	2	1	0	0.00	2	1	0	0.00	3	3
26700	<i>Macromia sp</i>	MI	0	0.00	0	0	0	0.00	2	2	0	0.00	5	5	0	0.00	6	6	0	0.00	0	0	0	0.00	2	1	0	0.00	3	2
23909	<i>Boyeria vinosa</i>	F	0	0.00	1	1	0	0.00	1	1	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	3	2
34715	<i>Agnetina flavescens</i>	I	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	3	2
27400	<i>Neurocordulia sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	3	2
99240	<i>Lasmigona complanata</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	8	8	0	0.00	4	2	0	0.00	16	8	0	0.00	2	2
84020	<i>Parachironomus carinatus</i>	F	0	0.00	0	0	0	0.00	0	0	30	0.01	0	1	33	0.01	3	3	0	0.00	4	2	614	0.12	12	7	0	0.00	2	2
84888	<i>Xenochironomus xenolabis</i>	F	42	0.13	0	1	0	0.00	2	2	0	0.00	2	2	0	0.00	1	1	0	0.00	0	0	114	0.02	8	4	0	0.00	2	2
21200	<i>Calopteryx sp</i>	F	0	0.00	0	0	0	0.00	1	1	0	0.00																		

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites	HD Abundance	% of Sample	Qual Sites	HD Sites
42700	<i>Belostoma sp</i>	T	0	0.00	1	1	0	0.00	0	0	0	0.00	1	1	0	0.00	2	2	0	0.00	0	0	0	0.00	4	2	0	0.00	2	1
85265	<i>Cladotanytarsus vanderwulpi group sp 5</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	66	0.01	4	2	0	0.00	2	2
24501	<i>Gomphidae</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	2	1	0	0.00	2	1
04601	<i>Glossiphoniidae</i>	MT	0	0.00	0	0	0	0.00	0	0	5	0.00	0	1	0	0.00	0	0	0	0.00	2	1	0	0.00	2	1	0	0.00	2	1
66500	<i>Enochrus sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	5	5	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	2	2
79085	<i>Telopelopia okabaji</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	2	2
80440	<i>Cricotopus (C.) trifascia</i>	F	0	0.00	0	0	0	0.00	1	1	2027	0.59	4	5	0	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2
04964	<i>Erpobdella microstoma</i>	MT	0	0.00	0	0	3	0.00	3	4	1	0.00	5	6	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2
64800	<i>Uvarus sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2
11651	<i>Proclaoan sp (w/o hindwing pads)</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1
84100	<i>Paracladopelma sp</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1
99640	<i>Truncilla donaciformis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	5	5	0	0.00	2	1	0	0.00	20	10	0	0.00	1	1
04960	<i>Erpobdella sp (= Mooreobdella)</i>	MT	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	0	0	0	0.00	0	0	2	0.00	12	7	0	0.00	1	1
63900	<i>Laccophilus sp</i>	T	0	0.00	2	2	0	0.00	2	2	0	0.00	6	6	0	0.00	10	10	0	0.00	4	2	0	0.00	6	3	0	0.00	1	1
49200	<i>Climacia sp</i>	F	0	0.00	0	0	0	0.00	4	4	0	0.00	1	1	0	0.00	1	1	0	0.00	2	1	0	0.00	6	3	0	0.00	1	1
34600	<i>Perlinella sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	6	3	0	0.00	1	1
04664	<i>Helobdella stagnalis</i>	T	0	0.00	0	0	0	0.00	5	5	0	0.00	6	6	1	0.00	4	5	0	0.00	2	1	2	0.00	4	3	0	0.00	1	1
59140	<i>Ceraclea maculata</i>	MI	0	0.00	0	0	0	0.00	0	0	14	0.00	0	2	2	0.00	1	2	64	0.07	2	2	6	0.00	4	2	0	0.00	1	1
24107	<i>Nasioeschna pentacantha</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	4	2	0	0.00	1	1
59410	<i>Nectopsyche diarina</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	1	1
92615	<i>Cipangopaludina japonica</i>	MT	0	0.00	0	0	0	0.00	0	0	4	0.00	4	4	0	0.00	1	1	0	0.00	2	1	0	0.00	2	1	0	0.00	1	1
04661	<i>Helobdella elongata</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	2	1	0	0.00	1	1
96930	<i>Laevapex fuscus</i>	MT	0	0.00	0	0	0	0.00	2	2	73	0.02	5	5	0	0.00	6	6	0	0.00	0	0	16	0.00	2	1	0	0.00	1	1
05900	<i>Lirceus sp</i>	MT	0	0.00	2	2	0	0.00	0	0	0	0.00	3	3	3	0.00	3	3	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
83410	<i>Harnischia curtillamellata</i>	F	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
99860	<i>Lampsilis radiata luteola</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
83820	<i>Microtenidipes "caelum" (sensu Simpson & Bode, 1980)</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
04962	<i>Erpobdella fervida</i>	MT	0	0.00	0	0	0	0.00	1	1	1	0.00	5	5	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
11118	<i>Plauditus dubius</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	1	1
83310	<i>Glyptotendipes (Heynotendipes) chelonia</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	82	0.09	2	1	0	0.00	0	0	0	0.00	1	1
25300	<i>Ophiogomphus sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
49400	<i>Sisyra sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
23600	<i>Aeshna sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
59001	<i>Leptoceridae</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
71100	<i>Hexatoma sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
84116	<i>Paracladopelma nereis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
84750	<i>Stictochironomus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
85230	<i>Cladotanytarsus mancus group</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
12924	<i>Heptagenia flavescens</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
04660	<i>Helobdella sp</i>	MT	2	0.01	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
24700	<i>Dromogomphus sp</i>	F	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
81460	<i>Orthocladius (O.) sp</i>	F	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
82710	<i>Chironomus (C.) sp</i>	MT	18	0.06	0	1	0	0.00	0	0	0	0.00	0	0	90	0.04	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
04685	<i>Placobdella ornata</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
04687	<i>Placobdella parastica</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
04930	<i>Erpobdella sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
11251	<i>Anafroptilum (Centropilum sp, w/ hindwing pads)</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
13010	<i>Leucrocota hebe</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
13540	<i>Maccaffertium mediopunctatum</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
18600	<i>Ephemera sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
23804	<i>Basiaeschna janata</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
58505	<i>Helicopsyche borealis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
67805	<i>Tropisternus glaber</i>		0	0.00	0	0	0	0.00	0	0	0	0.00																		

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites
83002	<i>Dicrondipes modestus</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1040	0.21	0	2	0	0.00	1	1
83158	<i>Endochironomus nigricans</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
85200	<i>Cladotanytarsus sp</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
85264	<i>Cladotanytarsus vanderwulpi group sp 4</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
85500	<i>Paratanytarsus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
87400	<i>Stratiomys sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
99780	<i>Ligumia recta</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1
83250	<i>Gilliatia albiviridis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	12	6	0	0.00	0	0
45300	<i>Sigara sp</i>	MT	0	0.00	0	0	0	0.00	2	2	0	0.00	4	4	0	0.00	4	4	0	0.00	2	1	0	0.00	10	5	0	0.00	0	0
99320	<i>Tritogonia verrucosa</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	3	3	0	0.00	2	1	0	0.00	8	4	0	0.00	0	0
82101	<i>Thienemanniella taurocapita</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	310	0.06	8	4	0	0.00	0	0
94400	<i>Fossaria sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	3	3	0	0.00	0	0	0	0.00	4	2	0	0.00	4	2	0	0.00	0	0
63300	<i>Hydroparini</i>	T	0	0.00	0	0	0	0.00	3	3	0	0.00	10	10	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	0	0
54160	<i>Ochrotrichia sp</i>	MI	0	0.00	0	0	0	0.00	0	0	1	0.00	2	2	0	0.00	0	0	0	0.00	0	0	2	0.00	4	2	0	0.00	0	0
83400	<i>Harnischia sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	0	0
84800	<i>Tribelos jucundum</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	2	0	0.00	0	0
99720	<i>Potamilus ohioensis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	4	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
60300	<i>Dineutus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	4	4	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
82600	<i>Axarus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
74501	<i>Ceratopogonidae</i>	T	4	0.01	0	1	0	0.00	0	0	0	0.00	5	5	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
47600	<i>Sialis sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	4	4	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
52620	<i>Macrostemum zebratum</i>	I	0	0.00	0	0	0	0.00	0	0	15	0.00	4	6	771	0.34	1	3	4	0.00	0	1	2	0.00	2	1	0	0.00	0	0
08255	<i>Orconectes rusticus x sanbornii</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
89716	<i>Limnophora discreta</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
99420	<i>Amblema plicata plicata</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
27307	<i>Epitheca (Epicordulia) princeps</i>	MT	0	0.00	0	0	0	0.00	0	0	4	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
71900	<i>Tipula sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
04682	<i>Placobdella montifera</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
84155	<i>Paralauterborniella nigrohalteralis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
69420	<i>Stenelmis sexlineata</i>		0	0.00	0	0	117	0.07	9	9	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	48	0.01	2	1	0	0.00	0	0
02600	<i>Nematomorpha</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
04510	<i>Hirudinida</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
11121	<i>Labiobaetis sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
11150	<i>Labiobaetis propinquus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
25010	<i>Hagenius brevistylus</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
25305	<i>Ophiogomphus rupinsulensis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
48220	<i>Chauliodes rastricornis</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
52540	<i>Hydropsyche dicantha</i>	MI	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	0	0	0	0.00	0	0	2	0.00	2	1	0	0.00	0	0
61100	<i>Acilius sp</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
77470	<i>Coelotanytarsus sp</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
81200	<i>Nanocladius sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
84210	<i>Paratendipes albimanus or P. duplicatus</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
84790	<i>Tribelos fuscicorne</i>	F	0	0.00	0	0	0	0.00	0	0	4	0.00	0	1	66	0.03	0	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0
27404	<i>Neurocordulia molesta</i>	F	0	0.00	0	0	0	0.00	0	0	8	0.00	0	4	3	0.00	6	7	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
67700	<i>Paracymus sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
71300	<i>Limonia sp</i>	F	0	0.00	0	0	0	0.00	1	1	0	0.00	2	2	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
59400	<i>Nectopsyche sp</i>	MI	0	0.00	0	0	0	0.00	2	2	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
94201	<i>Lymnaeidae</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
65501	<i>Hydrophilidae</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
70502	<i>Limoniinae</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	1	0	0.00	0	0	0	0.00	0	0
85263	<i>Cladotanytarsus vanderwulpi group sp 3</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	54	0.06	2	1	0	0.00	0	0	0	0.00	0	0
77740	<i>Hayesomyia senata</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	5934	2.63	8	8	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
99100	<i>Pyganodon grandis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	4	0	0.										

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites
78702	<i>Psectrotanytus dyari</i>	VT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
81229	<i>Nanocladius (N.) crassicornus</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1410	0.63	2	7	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
59100	<i>Ceraclea sp</i>	MI	0	0.00	0	0	1	0.00	1	2	24	0.01	5	7	1	0.00	1	2	0	0.00	0	0	64	0.01	0	1	0	0.00	0	0
67500	<i>Laccobius sp</i>	F	0	0.00	0	0	0	0.00	2	2	0	0.00	3	3	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
25620	<i>Stylurus spiniceps</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
87601	<i>Dolichopodidae</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
03000	<i>Ectoprocta</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	2	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
13590	<i>Maccaffertium vicarium</i>	MI	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	68	0.03	1	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
45000	<i>Hesperocorixa sp</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
48620	<i>Nigronia serricornis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
52510	<i>Hydropsyche aerata</i>	MI	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
53300	<i>Glossosoma sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
59570	<i>Oecetis nocturna</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
60400	<i>Gyrinus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
60800	<i>Haliphus sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
70800	<i>Erioptera sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
82900	<i>Demicroptochironomus sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
84315	<i>Phaenopsectra flavipes</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
84960	<i>Pseudochironomus sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
85261	<i>Cladotanytarsus vanderwulpi</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
86100	<i>Chrysops sp</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
95907	<i>Gyraulus (Torquais) parvus</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
96200	<i>Planorbella sp</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
99120	<i>Utterbackia imbecillis</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
99140	<i>Anodonta suborbiculata</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
99830	<i>Lampsilis fasciata</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
11100	<i>Baetis sp</i>	F	2936	9.11	7	8	786	0.45	8	8	3183	0.92	16	17	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
81230	<i>Nanocladius (N.) crassicornus (old)</i>	F	0	0.00	0	0	1193	0.68	0	4	1832	0.53	5	11	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
78650	<i>Procladius sp</i>	MT	0	0.00	0	0	0	0.00	2	2	0	0.00	4	4	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
11300	<i>Procloeon sp (formerly in Centroptilium)</i>	MI	0	0.00	0	0	1	0.00	1	1	0	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
28955	<i>Plathemis lydia</i>	T	0	0.00	0	0	0	0.00	1	1	0	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
28511	<i>Libellula luctuosa</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	3	3	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
81201	<i>Nanocladius (N.) sp</i>	F	173	0.54	0	2	0	0.00	0	0	251	0.07	2	3	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
81260	<i>Nanocladius (N.) "rectinervis" (old)</i>	MT	0	0.00	0	0	0	0.00	0	0	651	0.19	2	4	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
96280	<i>Planorbella (Pierosoma) trivalvis</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
00700	<i>Radiospongilla crateriformis</i>	F	0	0.00	0	0	0	0.00	3	3	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
34300	<i>Neoperla clymene complex</i>	I	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
79020	<i>Tanytus neopunctipennis</i>	T	0	0.00	0	0	0	0.00	1	1	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
85814	<i>Tanytarsus glabrescens group</i>	F	21	0.07	0	1	0	0.00	0	0	131	0.04	1	3	107	0.05	0	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
04662	<i>Helobdella fusca</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
04680	<i>Placobdella sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
11120	<i>Baetis flavistriga</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	2	0.00	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
24820	<i>Gomphurus externus</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
25600	<i>Stylurus sp</i>	MI	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
26705	<i>Macromia illinoensis</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
28208	<i>Erythemis simplicicollis</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
68300	<i>Cyphon sp</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
83380	<i>Gaeldichironomus holoprasinus</i>	VT	0	0.00	0	0	0	0.00	0	0	47	0.01	1	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
84050	<i>Parachironomus "hirtalatus" (sensu Simpson & Bode, 1980)</i>	T	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
84612	<i>Saetheria tylus</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
99001	<i>Unionidae</i>		0	0.00	0	0	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
13030	<i>Leucrocata maculipennis</i>	MI	0	0.00	0	0	0	0.00	1	1	0	0.																		

Appendix Table C-5. Macroinvertebrate taxa collected from HD and qualitative samples in the Scioto River downstream from the Greenlawn Dam in year intervals between 1979 and 2020.

OEPA Taxa Code	Taxa Name	OEPA Tolerance	1979-1983				1984-1987				1988-1993				1994-1997				2004-2007				2008-2013				2014-2020			
			HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites	HD Abundance	% of Samples	Qual Sites	HD Sites
96264	<i>Planorbella (Plerosoma) pilsbryi</i>	T	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
98200	<i>Pisidium sp</i>	MT	0	0.00	0	0	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
13560	<i>Maccaffertium pulchellum group</i>	MI	3284	10.19	5	7	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
07701	<i>Cambaridae</i>		0	0.00	2	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
78700	<i>Psectrotanypus sp</i>	VT	0	0.00	1	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
82501	<i>Chironomini</i>		19	0.06	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
80350	<i>Corynoneura sp</i>		4	0.01	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
82200	<i>Tvetenia bavarica group</i>	MI	4	0.01	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
01418	<i>Craspedacusta sowerbyi</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	0	0	4	0.00	0	1	0	0.00	0	0
03337	<i>Hyalinella punctata</i>	MI	0	0.00	0	0	2	0.00	0	2	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
51001	<i>Polycentropodidae</i>		0	0.00	0	0	0	0.00	0	0	32	0.01	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
52431	<i>Ceratopsyche morosa</i>	MI	0	0.00	0	0	0	0.00	0	0	189	0.05	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
52530	<i>Hydropsyche depravata group</i>	F	0	0.00	0	0	0	0.00	0	0	1	0.00	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
80370	<i>Corynoneura lobata</i>	F	0	0.00	0	0	0	0.00	0	0	16	0.00	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
81250	<i>Nanacladius (N.) minimus</i>	F	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	31	0.01	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
84460	<i>Polypedilum (P.) fallax group</i>	F	0	0.00	0	0	176	0.10	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	18	0.00	0	1	0	0.00	0	0
96120	<i>Menetus (Micromenetus) dilatatus</i>	MT	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0	9	0.00	0	1	0	0.00	0	0	0	0.00	0	0	0	0.00	0	0
	Total Abundance		32234				2E+05				3E+05			2E+05			94140			5E+05			4E+05							
	Number of Samples		9				10				31			24			5			17			34							
	HD Taxa		82				123				194			201			127			203			231							
	Qualitative Taxa		53				116				173			173			108			193			207							
	Total Taxa		82				123				194			201			127			203			231							

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: <i>Scioto River</i>		Coll. Date: <i>09/21/2020</i>		RM: 97.90			
Site ID: SR23		Location: <i>Dst. Wickett Dam</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	67800	Tropisternus sp	T		+
01801	Turbellaria	F		17 +	68075	Psephenus herricki	MI		+
03000	Ectoprocta	F		+	68130	Helichus sp	F		+
03600	Oligochaeta	T		+	68708	Dubiraphia vittata group	F		+
05800	Caecidotea sp	T		2 +	68901	Macronychus glabratus	F		+
05900	Lirceus sp	MT		+	69400	Stenelmis sp	F		35 +
08250	Orconectes (Procericambarus) rusticus	F		+	74100	Simulium sp	F		12 +
08601	Hydrachnidia	F		+	77750	Hayesomyia senata or Thienemannimyia norena	F		44 +
11118	Plauditus dubius	MI		+	78140	Labrundinia pilosella	F		+
11123	Labiobaetis dardanus	MI		+	82220	Tvetenia discoloripes group	MI		15
11130	Baetis intercalaris	F		451 +	82820	Cryptochironomus sp	F		+
11600	Paracloeodes fleeki	MI		+	83300	Glyptotendipes (G.) sp	MT		95 +
11620	Paracloeodes minutus	MI		+	84450	Polypedilum (Uresipedilum) flavum	F		161 +
12200	Isonychia sp	MI		642 +	84470	Polypedilum (P.) illinoense	T		+
13000	Leucrocuta sp	MI		+	84540	Polypedilum (Tripodura) scalaenum group	F		15
13400	Stenacron sp	F		11 +	85265	Cladotanytarsus vanderwulpi group sp 5	MI		7
13510	Maccaffertium exiguum	MI		595 +	85615	Rheotanytarsus pellucidus	MI		22
13550	Maccaffertium mexicanum integrum	MI		87	85625	Rheotanytarsus sp	F		278 +
13570	Maccaffertium terminatum	MI		211 +	93900	Elimia sp	MI		+
16700	Tricorythodes sp	MI		26 +	96900	Ferrissia sp	F		1
17200	Caenis sp	F		82 +	96930	Laevapex fuscus	MT		+
18100	Anthopotamus sp	MI		+	97601	Corbicula fluminea	F		2
21300	Hetaerina sp	F		+	97710	Dreissena polymorpha	F		+
22001	Coenagrionidae	T		+	98001	Pisidiidae			+
22300	Argia sp	F		17 +	98600	Sphaerium sp	F		2
23909	Boyeria vinosa	F		+	99120	Utterbackia imbecillis	MI		1
24900	Gomphus sp	F		+					
26700	Macromia sp	MI		+					
34605	Perlinella drymo	MI		+	No. Quantitative Taxa: 34				Total Taxa; 67
34715	Agnatina flavescens	I		5 +	No. Qualitative Taxa: 56				ICI: 54
45400	Trichocorixa sp	MT		+	Number of Organisms: 4901				Qual EPT: 21
48410	Corydalus cornutus	MI		1	Aquatic Life Use: WWH				CWH Taxa: 0
50315	Chimarra obscura	MI		117 +					
52200	Cheumatopsyche sp	F		340 +					
52430	Ceratopsyche morosa group	MI		2					
52521	Hydropsyche bidens or H. orris	MI		77 +					
52570	Hydropsyche simulans	MI		899 +					
52801	Potamyia flava	MI		628 +					
59407	Nectopsyche candida	MI		1 +					
60900	Peltodytes sp	MT		+					
67750	Sperchopsis tessellata	F		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/21/2020		RM: 98.70			
Site ID: SR22		Location: Dst. Circleville WWTP		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		16	82820	Cryptochironomus sp	F		+
03000	Ectoprocta	F		+	82885	Cryptotendipes pseudotener	F		+
03600	Oligochaeta	T		8 +	83300	Glyptotendipes (G.) sp	MT		35 +
04901	Erpobdellidae	MT		+	84300	Phaenopsectra obediens group	F		+
05800	Caecidotea sp	T		+	84450	Polypedilum (Uresipedilum) flavum	F		161 +
06700	Crangonyx sp	MT		+	85265	Cladotanytarsus vanderwulpi group	MI		+
11123	Labiobaetis dardanus	MI		1 +		sp 5			
11130	Baetis intercalaris	F		300 +	85625	Rheotanytarsus sp	F		171 +
11620	Paracloeodes minutus	MI		+	93900	Elimia sp	MI		+
12200	Isonychia sp	MI		472 +	95100	Physella sp	T		+
13000	Leucrocuta sp	MI		+	96900	Ferrissia sp	F		+
13100	Nixe sp	MI		+	97601	Corbicula fluminea	F		8
13400	Stenacron sp	F		4 +	98600	Sphaerium sp	F		+
13510	Maccaffertium exiguum	MI		337	99700	Potamilus alatus	MI		+
13540	Maccaffertium mediopunctatum	MI		4					
13550	Maccaffertium mexicanum integrum	MI		4	No. Quantitative Taxa: 30 Total Taxa; 54				
13570	Maccaffertium terminatum	MI		282 +	No. Qualitative Taxa: 46 ICI: 50				
16700	Tricorythodes sp	MI		16 +	Number of Organisms: 4229 Qual EPT: 20				
17200	Caenis sp	F		6 +	Aquatic Life Use: WWH CWH Taxa: 0				
18100	Anthopotamus sp	MI		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		2 +					
26700	Macromia sp	MI		+					
34605	Perlinella drymo	MI		+					
45400	Trichocorixa sp	MT		+					
50315	Chimarra obscura	MI		47 +					
52200	Cheumatopsyche sp	F		134 +					
52430	Ceratopsyche morosa group	MI		26 +					
52521	Hydropsyche bidens or H. orris	MI		166 +					
52570	Hydropsyche simulans	MI		825 +					
52801	Potamyia flava	MI		1083 +					
53400	Protoptila sp	I		+					
59407	Nectopsyche candida	MI		+					
68601	Ancyronyx variegata	F		3					
68901	Macronychus glabratus	F		19 +					
69400	Stenelmis sp	F		19 +					
74100	Simulium sp	F		20 +					
77750	Hayesomyia senata or Thienemannimyia norena	F		45					
78450	Nilotanypus fimbriatus	F		5 +					
80400	Cricotopus sp	F		+					
82220	Tvetenia discoloripes group	MI		10					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/21/2020		RM: 99.40			
Site ID: SR21		Location: Ust. Circleville WWTP		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	77120	Ablabesmyia mallochi	F		+
01801	Turbellaria	F		+	77750	Hayesomyia senata or Thienemannimyia norena	F		29 +
03000	Ectoprocta	F		+	78140	Labrundinia pilosella	F		+
03600	Oligochaeta	T		+	78650	Procladius sp	MT		+
04615	Actinobdella inequiannulata	MT		+	80310	Cardiocladius obscurus	MI		+
05800	Caecidotea sp	T		+	80420	Cricotopus (C.) bicinctus	T		+
05900	Lirceus sp	MT		+	80430	Cricotopus (C.) tremulus group	MT		+
06201	Hyalella azteca	F		+	81825	Rheocricotopus (Psilocricotopus) robacki	F		7
08250	Orconectes (Procericambarus) rusticus	F		+	82220	Tvetenia discoloripes group	MI		+
11123	Labiobaetis dardanus	MI		+	83300	Glyptotendipes (G.) sp	MT		81 +
11130	Baetis intercalaris	F	266	+	84040	Parachironomus frequens	F		+
12200	Isonychia sp	MI	632	+	84450	Polypedilum (Uresipedilum) flavum	F		191 +
13000	Leucrocota sp	MI		+	84600	Saetheria sp	F		+
13400	Stenacron sp	F		+	85625	Rheotanytarsus sp	F		839 +
13510	Maccaffertium exiguum	MI	476		85800	Tanytarsus sp	F		+
13540	Maccaffertium mediopunctatum	MI		+	87501	Empididae	F		8
13550	Maccaffertium mexicanum integrum	MI	79		93900	Elimia sp	MI		+
13570	Maccaffertium terminatum	MI	364	+	96900	Ferrissia sp	F		16 +
16700	Tricorythodes sp	MI	76	+	99700	Potamilus alatus	MI		+
17200	Caenis sp	F	164	+					
18100	Anthopotamus sp	MI		+	No. Quantitative Taxa: 25		Total Taxa; 60		
21200	Calopteryx sp	F		+	No. Qualitative Taxa: 53		ICI: 52		
22300	Argia sp	F	1	+	Number of Organisms: 4687		Qual EPT: 17		
24107	Nasiaeschna pentacantha	MT		+	Aquatic Life Use: WWH		CWH Taxa: 0		
24900	Gomphus sp	F		+					
34715	Agnetina flavescens	I	1	+					
45400	Trichocorixa sp	MT		+					
48410	Corydalus cornutus	MI	1						
50315	Chimarra obscura	MI	47	+					
51206	Cymellus fraternus	F	1						
52200	Cheumatopsyche sp	F	243	+					
52430	Ceratopsyche morosa group	MI		+					
52521	Hydropsyche bidens or H. orris	MI	16						
52570	Hydropsyche simulans	MI	833	+					
52801	Potamyia flava	MI	297	+					
59100	Ceraclea sp	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
68901	Macronychus glabratus	F	18	+					
69400	Stenelmis sp	F		+					
74100	Simulium sp	F	1	+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/22/2020		RM: 100.10			
Site ID: SR20		Location: Circleville riffle (Ust. U.S. Rt. 22)		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		+	78655	Procladius (Holotanypus) sp	MT		+
03360	Plumatella sp	F		+	80360	Corynoneura floridaensis	MI		+
03600	Oligochaeta	T	16	+	82220	Tvetenia discoloripes group	MI		49
04666	Helobdella papillata	MT		+	82885	Cryptotendipes pseudotener	F		+
04682	Placobdella montifera	MT		+	83300	Glyptotendipes (G.) sp	MT		25 +
04750	Myzobdella lugubris			+	84450	Polypedilum (Uresipedilum) flavum	F		493 +
08250	Orconectes (Procericambarus) rusticus	F		+	84520	Polypedilum (Tripodura) halterale group	MT		+
08601	Hydrachnidia	F	16		85265	Cladotanytarsus vanderwulpi group sp 5	MI		+
11130	Baetis intercalaris	F	505	+	85625	Rheotanytarsus sp	F		555 +
11600	Paracloeodes fleeki	MI		+	93900	Elimia sp	MI		+
11620	Paracloeodes minutus	MI		+	96900	Ferrissia sp	F		+
12200	Isonychia sp	MI	769	+	99680	Leptodea fragilis	MI		+
13000	Leucrocuta sp	MI		+					
13400	Stenacron sp	F		+					
13510	Maccaffertium exiguum	MI	680	+	No. Quantitative Taxa: 19 Total Taxa; 53				
13570	Maccaffertium terminatum	MI	19		No. Qualitative Taxa: 48 ICI: 44				
16700	Tricorythodes sp	MI	72	+	Number of Organisms: 8064 Qual EPT: 21				
17200	Caenis sp	F		+	Aquatic Life Use: WWH CWH Taxa: 0				
18100	Anthopotamus sp	MI		+					
18600	Ephemera sp	MI		+					
22300	Argia sp	F		+					
34605	Perlinella drymo	MI		+					
44501	Corixidae	F		+					
50315	Chimarra obscura	MI	29	+					
51206	Cynellus fraternus	F		+					
52200	Cheumatopsyche sp	F	402	+					
52430	Ceratopsyche morosa group	MI		+					
52521	Hydropsyche bidens or H. orris	MI	493						
52570	Hydropsyche simulans	MI	1976	+					
52801	Potamyia flava	MI	1628	+					
53400	Protoptila sp	I		+					
53800	Hydroptila sp	F		+					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
68901	Macronychus glabratus	F		+					
69400	Stenelmis sp	F	12	+					
74100	Simulium sp	F	263						
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or Thienemannimyia norena	F	62	+					
78140	Labrundinia pilosella	F		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/22/2020		RM: 102.00	
Site ID: SR19		Location: Dst. Commercial Point Rd. bridge				Sample:	
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
00401	Spongillidae	F	+		N. (N.) "rectinervis"		
01801	Turbellaria	F	+	82130	Thienemanniella similis	MI	+
01900	Nemertea	F	16	82220	Tvetenia discoloripes group	MI	39
03360	Plumatella sp	F	+	82820	Cryptochironomus sp	F	+
03600	Oligochaeta	T	+	83300	Glyptotendipes (G.) sp	MT	20 +
04615	Actinobdella inequiannulata	MT	+	84450	Polypedilum (Uresipedilum) flavum	F	302 +
04666	Helobdella papillata	MT	+	84540	Polypedilum (Tripodura) scalaenum group	F	+
11123	Labiobaetis dardanus	MI	+	84700	Stenochironomus sp	F	10
11130	Baetis intercalaris	F	291 +	85615	Rheotanytarsus pellucidus	MI	10
11620	Paracloeodes minutus	MI	+	85625	Rheotanytarsus sp	F	546 +
12200	Isonychia sp	MI	826 +	85821	Tanytarsus glabrescens group sp 7	F	+
12924	Heptagenia flavescens	MI	+	87540	Hemerodromia sp	F	16
13000	Leucrocuta sp	MI	+	93900	Elimia sp	MI	+
13100	Nixe sp	MI	+	96900	Ferrissia sp	F	+
13400	Stenacron sp	F	+	97710	Dreissena polymorpha	F	+
13510	Maccaffertium exiguum	MI	811 +	98600	Sphaerium sp	F	+
13550	Maccaffertium mexicanum integrum	MI	+	99580	Obliquaria reflexa	MI	+
13570	Maccaffertium terminatum	MI	128 +	99680	Leptodea fragilis	MI	+
16700	Tricorythodes sp	MI	33 +	99700	Potamilus alatus	MI	+
17200	Caenis sp	F	4 +				
18100	Anthopotamus sp	MI	+	No. Quantitative Taxa: 25		Total Taxa; 59	
22300	Argia sp	F	+	No. Qualitative Taxa: 50		ICI: 52	
24900	Gomphus sp	F	+	Number of Organisms: 6857		Qual EPT: 22	
50315	Chimarra obscura	MI	19 +	Aquatic Life Use: WWH		CWH Taxa: 0	
52200	Cheumatopsyche sp	F	489 +				
52521	Hydropsyche bidens or H. orris	MI	79 +				
52570	Hydropsyche simulans	MI	1056 +				
52801	Potamyia flava	MI	1969 +				
53400	Protoptila sp	I	+				
53800	Hydroptila sp	F	+				
59407	Nectopsyche candida	MI	+				
59970	Petrophila sp	MI	+				
60900	Peltodytes sp	MT	+				
68601	Ancyronyx variegata	F	8				
68901	Macronychus glabratus	F	10				
69400	Stenelmis sp	F	26 +				
74100	Simulium sp	F	32 +				
77750	Hayesomyia senata or Thienemannimyia norena	F	107				
78750	Rheopelopia paramaculipennis	MI	+				
80310	Cardiocladius obscurus	MI	+				
81231	Nanocladius (N.) crassicornus or	F	10				

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/28/2020		RM: 106.00			
Site ID: SR18		Location: <i>dst. Walnut Creek</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		+	96900	Ferrissia sp	F		4 +
03600	Oligochaeta	T		+	97601	Corbicula fluminea	F		+
05800	Caecidotea sp	T		+					
11123	Labiobaetis dardanus	MI		+	No. Quantitative Taxa:	22	Total Taxa:	44	
11130	Baetis intercalaris	F	532	+	No. Qualitative Taxa:		39	ICI:	48
12200	Isonychia sp	MI	352	+	Number of Organisms:	5708	Qual EPT:	19	
13000	Leucrocuta sp	MI		+	Aquatic Life Use:	WWH	CWH Taxa:	0	
13400	Stenacron sp	F		+					
13510	Maccaffertium exiguum	MI	445	+					
13570	Maccaffertium terminatum	MI	25	+					
16700	Tricorythodes sp	MI		+					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
21300	Hetaerina sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		+					
44501	Corixidae	F		+					
48410	Corydalus cornutus	MI	1						
50315	Chimarra obscura	MI	3	+					
52200	Cheumatopsyche sp	F	245	+					
52430	Ceratopsyche morosa group	MI	20	+					
52521	Hydropsyche bidens or H. orris	MI	442	+					
52570	Hydropsyche simulans	MI	2309	+					
52801	Potamyia flava	MI	145	+					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		+					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
68708	Dubiraphia vittata group	F		+					
68901	Macronychus glabratus	F	1	+					
69400	Stenelmis sp	F	72	+					
74100	Simulium sp	F	36	+					
79100	Thienemannimyia group	F	12						
80420	Cricotopus (C.) bicinctus	T	12						
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	24						
82130	Thienemanniella similis	MI	96	+					
82220	Tvetenia discoloripes group	MI	48						
84450	Polypedilum (Uresipedilum) flavum	F	167	+					
85625	Rheotanytarsus sp	F	717	+					
93900	Elimia sp	MI		+					
95100	Physella sp	T		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 10/01/2020		RM: 107.40			
Site ID: SR17		Location: <i>ust. Walnut Creek</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		32	82820	Cryptochironomus sp	F		+
03360	Plumatella sp	F		1	83300	Glyptotendipes (G.) sp	MT		215 +
03600	Oligochaeta	T		16 +	84039	Parachironomus frequens group			41
05800	Caecidotea sp	T		+	84450	Polypedilum (Uresipedilum) flavum	F		102
06700	Crangonyx sp	MT		+	84520	Polypedilum (Tripodura) halterale group	MT		+
11123	Labiobaetis dardanus	MI		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
11130	Baetis intercalaris	F		144 +	85625	Rheotanytarsus sp	F		480 +
11651	Proclleon sp (w/o hindwing pads)	MI		+	85821	Tanytarsus glabrescens group sp 7	F		20
12200	Isonychia sp	MI		593 +	87540	Hemerodromia sp	F		8
13000	Leucrocota sp	MI		+	93900	Elimia sp	MI		1 +
13400	Stenacron sp	F		29	96900	Ferrissia sp	F		2 +
13510	Maccaffertium exiguum	MI		535 +	97601	Corbicula fluminea	F		+
13570	Maccaffertium terminatum	MI		935 +	98600	Sphaerium sp	F		+
16700	Tricorythodes sp	MI		49 +					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
22300	Argia sp	F		1 +	No. Quantitative Taxa:	35	Total Taxa;		54
24501	Gomphidae	F		+	No. Qualitative Taxa:		37	ICI:	52
34715	Agnetina flavescens	I		+	Number of Organisms:	4919	Qual EPT:		17
50315	Chimarra obscura	MI		5 +	Aquatic Life Use:	WWH	CWH Taxa:		0
51206	Cynellus fraternus	F		48					
52200	Cheumatopsyche sp	F		171 +					
52430	Ceratopsyche morosa group	MI		1					
52521	Hydropsyche bidens or H. orris	MI		98					
52570	Hydropsyche simulans	MI		907 +					
52801	Potamyia flava	MI		121 +					
53400	Protoptila sp	I		+					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		4 +					
60900	Peltodytes sp	MT		+					
68075	Psephenus herricki	MI		+					
68201	Scirtidae	F		+					
68601	Ancyronyx variegata	F		16					
68901	Macronychus glabratus	F		32					
69400	Stenelmis sp	F		8 +					
74100	Simulium sp	F		17 +					
77750	Hayesomyia senata or Thienemannimyia norena	F		133					
80410	Cricotopus (C.) sp	F		41					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		41					
82130	Thienemanniella similis	MI		41					
82220	Tvetenia discoloripes group	MI		31					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/28/2020		RM: 109.20	
Site ID: SR16		Location: Dst. St. Rt, 316		Sample:			
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
01801	Turbellaria	F	34 +	84540	Polypedilum (Tripodura) scalaenum group	F	14
05800	Caecidotea sp	T	1 +	85625	Rheotanytarsus sp	F	711 +
06700	Crangonyx sp	MT	+	93900	Elimia sp	MI	+
11123	Labiobaetis dardanus	MI	2 +	96900	Ferrissia sp	F	32 +
11130	Baetis intercalaris	F	562 +	97601	Corbicula fluminea	F	1 +
11620	Paracloeodes minutus	MI	+	98600	Sphaerium sp	F	+
12200	Isonychia sp	MI	917 +	99380	Quadrula pustulosa pustulosa	MI	+
13510	Maccaffertium exiguum	MI	678 +	99680	Leptodea fragilis	MI	+
13550	Maccaffertium mexicanum integrum	MI	10	99700	Potamilus alatus	MI	+
13570	Maccaffertium terminatum	MI	874 +				
16700	Tricorythodes sp	MI	97 +	No. Quantitative Taxa:	28	Total Taxa:	49
18100	Anthopotamus sp	MI	+	No. Qualitative Taxa:		ICI:	52
21300	Hetaerina sp	F	+	Number of Organisms:	7431	Qual EPT:	15
22300	Argia sp	F	+	Aquatic Life Use:	WWH	CWH Taxa:	0
26700	Macromia sp	MI	+				
50315	Chimarra obscura	MI	98 +				
52200	Cheumatopsyche sp	F	802 +				
52521	Hydropsyche bidens or H. orris	MI	52 +				
52570	Hydropsyche simulans	MI	931 +				
52801	Potamyia flava	MI	1065 +				
53400	Protoptila sp	I	+				
59407	Nectopsyche candida	MI	+				
59970	Petrophila sp	MI	+				
65800	Berosus sp	MT	+				
68601	Ancyronyx variegata	F	+				
68901	Macronychus glabratus	F	32				
69400	Stenelmis sp	F	18 +				
74100	Simulium sp	F	17 +				
77120	Ablabesmyia mallochi	F	+				
77750	Hayesomyia senata or Thienemannimyia norena	F	171 +				
78140	Labrundinia pilosella	F	+				
78450	Nilotanypus fimbriatus	F	14				
80410	Cricotopus (C.) sp	F	+				
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	14				
82130	Thienemanniella similis	MI	14				
82220	Tvetenia discoloripes group	MI	14				
83300	Glyptotendipes (G.) sp	MT	171				
84100	Paracladopelma sp		+				
84450	Polypedilum (Uresipedilum) flavum	F	85 +				
84520	Polypedilum (Tripodura) halterale group	MT	+				

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: <i>Scioto River</i>		Coll. Date: <i>10/01/2020</i>		RM: 114.00			
Site ID: SR15		Location: <i>Dst. St. Rt. 762</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	82820	Cryptochironomus sp	F		+
01801	Turbellaria	F		+	83040	Dicrotendipes neomodestus	F		+
03600	Oligochaeta	T	48	+	83300	Glyptotendipes (G.) sp	MT		48 +
04601	Glossiphoniidae	MT		+	84450	Polypedilum (Uresipedilum) flavum	F		262 +
05800	Caecidotea sp	T		+	85625	Rheotanytarsus sp	F		585 +
06700	Crangonyx sp	MT		+	85821	Tanytarsus glabrescens group sp 7	F		24
08601	Hydrachnidia	F	16		87540	Hemerodromia sp	F		8
11130	Baetis intercalaris	F	400	+	93900	Elimia sp	MI		+
11620	Paracloeodes minutus	MI		+	97601	Corbicula fluminea	F		+
12200	Isonychia sp	MI	459	+	99380	Quadrula pustulosa pustulosa	MI		+
13000	Leucrocuta sp	MI		+	99400	Quadrula quadrula	MI		+
13510	Maccaffertium exiguum	MI	275		99580	Obliquaria reflexa	MI		+
13570	Maccaffertium terminatum	MI	508	+	99680	Leptodea fragilis	MI		+
16700	Tricorythodes sp	MI	145	+					
17200	Caenis sp	F		+	No. Quantitative Taxa:	28	Total Taxa;		53
18100	Anthopotamus sp	MI		+	No. Qualitative Taxa:		ICI:		50
22001	Coenagrionidae	T		+	Number of Organisms:	6205	Qual EPT:		15
22300	Argia sp	F		+	Aquatic Life Use:	WWH	CWH Taxa:		0
27400	Neurocordulia sp	F		+					
50315	Chimarra obscura	MI	2	+					
52200	Cheumatopsyche sp	F	906	+					
52430	Ceratopsyche morosa group	MI	65	+					
52521	Hydropsyche bidens or H. orris	MI	224						
52570	Hydropsyche simulans	MI	1274	+					
52801	Potamyia flava	MI	469						
53400	Protoptila sp	I		+					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI	16	+					
68075	Psephenus herricki	MI		+					
68601	Ancyronyx variegata	F	8	+					
69400	Stenelmis sp	F	17	+					
74100	Simulium sp	F	16	+					
77750	Hayesomyia senata or Thienemannimyia norena	F	155	+					
80420	Cricotopus (C.) bicinctus	T		+					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	167						
81825	Rheocricotopus (Psilocricotopus) robacki	F	12						
82130	Thienemanniella similis	MI	24						
82141	Thienemanniella xena	F	12						
82220	Tvetenia discoloripes group	MI	60						
82730	Chironomus (C.) decorus group	T		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/28/2020		RM: 116.00			
Site ID: SR14		Location: Dst. Former Pickway Power Plant		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+		Thienemannimyia norena			
01801	Turbellaria	F		25 +	78140	Labrundinia pilosella	F		+
03360	Plumatella sp	F		1 +	78655	Procladius (Holotanypus) sp	MT		+
03600	Oligochaeta	T		16	80310	Cardiocladius obscurus	MI		+
04661	Helobdella elongata	MT		+	80410	Cricotopus (C.) sp	F		39 +
04901	Erpobdellidae	MT		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		117
05800	Caecidotea sp	T		1 +	81240	Nanocladius (N.) distinctus	MT		20 +
08250	Orconectes (Procericambarus) rusticus	F		+	82130	Thienemanniella similis	MI		299
08601	Hydrachnidia	F		32	82220	Tvetenia discoloripes group	MI		20 +
11118	Plauditus dubius	MI		+	82730	Chironomus (C.) decorus group	T		+
11130	Baetis intercalaris	F		157 +	83040	Dicrotendipes neomodestus	F		+
12200	Isonychia sp	MI		197	83300	Glyptotendipes (G.) sp	MT		137 +
13100	Nixe sp	MI		+	84450	Polypedilum (Uresipedilum) flavum	F		469 +
13400	Stenacron sp	F		70 +	84520	Polypedilum (Tripodura) halterale group	MT		+
13510	Maccaffertium exiguum	MI		998	85265	Cladotanytarsus vanderwulpi group sp 5	MI		+
13540	Maccaffertium mediopunctatum	MI		+	85625	Rheotanytarsus sp	F		527
13570	Maccaffertium terminatum	MI		248 +	85800	Tanytarsus sp	F		+
16700	Tricorythodes sp	MI		212 +	85821	Tanytarsus glabrescens group sp 7	F		39
17200	Caenis sp	F		8 +	87540	Hemerodromia sp	F		16
18100	Anthopotamus sp	MI		+	93900	Elimia sp	MI		8 +
21300	Hetaerina sp	F		2	96900	Ferrissia sp	F		2 +
22001	Coenagrionidae	T		+	99380	Quadrula pustulosa pustulosa	MI		+
22300	Argia sp	F		1 +	99400	Quadrula quadrula	MI		+
34715	Agnetina flavescens	I		+	99640	Truncilla donaciformis	MI		+
51206	Cymnellus fraternus	F		17	99700	Potamilus alatus	MI		+
52200	Cheumatopsyche sp	F		1017 +	99880	Lampsilis cardium	MI		+
52430	Ceratopsyche morosa group	MI		43 +					
52521	Hydropsyche bidens or H. orris	MI		116 +					
52570	Hydropsyche simulans	MI		1070 +					
52580	Hydropsyche valanis	MI		21 +	No. Quantitative Taxa:	38	Total Taxa;	67	
52801	Potamyia flava	MI		201 +	No. Qualitative Taxa:	53	ICI:	54	
53400	Protoptila sp	I		+	Number of Organisms:	6311	Qual EPT:	19	
53800	Hydroptila sp	F		1 +	Aquatic Life Use:	WWH	CWH Taxa:	0	
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		25 +					
68075	Psephenus herricki	MI		+					
68601	Ancyronyx variegata	F		1					
68901	Macronychus glabratus	F		1					
69400	Stenelmis sp	F		+					
74100	Simulium sp	F		+					
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or	F		137					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: <i>Scioto River</i>		Coll. Date: <i>09/28/2020</i>		RM: 116.80			
Site ID: SR13		Location: <i>Dst. Big Walnut Creek</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00653	Eunapius fragilis	F		+	78140	Labrundinia pilosella	F		+
03360	Plumatella sp	F		2	78655	Procladius (Holotanypus) sp	MT		+
03600	Oligochaeta	T		64 +	80410	Cricotopus (C.) sp	F		29 +
04666	Helobdella papillata	MT		+	80420	Cricotopus (C.) bicinctus	T		57
04750	Myzobdella lugubris			+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		343 +
04964	Erpobdella microstoma	MT		1 +	82130	Thienemanniella similis	MI		112 +
05800	Caecidotea sp	T		+	82220	Tvetenia discoloripes group	MI		57
06700	Crangonyx sp	MT		+	82730	Chironomus (C.) decorus group	T		+
08601	Hydrachnidia	F		16 +	83040	Dicretendipes neomodestus	F		+
11130	Baetis intercalaris	F		207 +	83050	Dicretendipes lucifer	MT		+
11600	Paracloeodes fleeki	MI		+	83300	Glyptotendipes (G.) sp	MT		257 +
12200	Isonychia sp	MI		185 +	84300	Phaenopsectra obediens group	F		+
13100	Nixe sp	MI		+	84450	Polypedilum (Uresipedilum) flavum	F		771 +
13400	Stenacron sp	F		82 +	84470	Polypedilum (P.) illinoense	T		+
13510	Maccaffertium exiguum	MI		735 +	85625	Rheotanytarsus sp	F		1028 +
13550	Maccaffertium mexicanum integrum	MI		1	85800	Tanytarsus sp	F		+
13570	Maccaffertium terminatum	MI		669 +	93900	Elimia sp	MI		+
16700	Tricorythodes sp	MI		581 +	96900	Ferrissia sp	F		32 +
17200	Caenis sp	F		+	99380	Quadrula pustulosa pustulosa	MI		+
18100	Anthopotamus sp	MI		+	99400	Quadrula quadrula	MI		+
21300	Hetaerina sp	F		8	99680	Leptodea fragilis	MI		+
22001	Coenagrionidae	T		+	99700	Potamilus alatus	MI		+
22300	Argia sp	F		11 +					
23909	Boyeria vinosa	F		+	No. Quantitative Taxa: 32		Total Taxa; 63		
44501	Corixidae	F		+	No. Qualitative Taxa: 56		ICI: 46		
51206	Cymellus fraternus	F		+	Number of Organisms: 9277		Qual EPT: 18		
52200	Cheumatopsyche sp	F		1736 +	Aquatic Life Use: WWH		CWH Taxa: 0		
52430	Ceratopsyche morosa group	MI		200 +					
52521	Hydropsyche bidens or H. orris	MI		123 +					
52570	Hydropsyche simulans	MI		936 +					
52801	Potamyia flava	MI		510 +					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		96					
59001	Leptoceridae			16					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
68601	Ancyronyx variegata	F		8 +					
69400	Stenelmis sp	F		33 +					
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or Thienemannimyia norena	F		371 +					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/28/2020		RM: 118.00			
Site ID: SR12		Location: Dst. Southerly WWTP		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	85800	Tanytarsus sp	F		45 +
03600	Oligochaeta	T	896	+	87540	Hemerodromia sp	F		32
04615	Actinobdella inequiannulata	MT		+	93900	Elimia sp	MI		+
04901	Erpobdellidae	MT	2	+	96900	Ferrissia sp	F		16
05800	Caecidotea sp	T	33	+	98600	Sphaerium sp	F		1
06700	Crangonyx sp	MT		+	99400	Quadrula quadrula	MI		+
11123	Labiobaetis dardanus	MI		+					
11130	Baetis intercalaris	F	145	+	No. Quantitative Taxa: 32		Total Taxa; 47		
12200	Isonychia sp	MI	32		No. Qualitative Taxa: 36		ICI: 36		
13400	Stenacron sp	F		+	Number of Organisms: 8917		Qual EPT: 14		
13510	Maccaffertium exiguum	MI	32	+	Aquatic Life Use: WWH		CWH Taxa: 0		
13570	Maccaffertium terminatum	MI	397	+					
16700	Tricorythodes sp	MI	417	+					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
22300	Argia sp	F		+					
24107	Nasiaeschna pentacantha	MT		+					
51206	Cyrnellus fraternus	F	3	+					
52200	Cheumatopsyche sp	F	1845	+					
52430	Ceratopsyche morosa group	MI	38	+					
52521	Hydropsyche bidens or H. orris	MI	114	+					
52570	Hydropsyche simulans	MI	408	+					
52801	Potamyia flava	MI	843	+					
53800	Hydroptila sp	F	16						
59970	Petrophila sp	MI		+					
69400	Stenelmis sp	F	32	+					
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or Thienemannimyia norena	F	362	+					
80410	Cricotopus (C.) sp	F	136						
80420	Cricotopus (C.) bicinctus	T		+					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	226						
81240	Nanocladius (N.) distinctus	MT	45						
82100	Thienemanniella sp		45	+					
82730	Chironomus (C.) decorus group	T		+					
83000	Dicrotendipes sp	F	45						
83050	Dicrotendipes lucifer	MT	45						
83300	Glyptotendipes (G.) sp	MT	1356	+					
84000	Parachironomus sp	MT	45						
84450	Polypedilum (Uresipedilum) flavum	F	723	+					
84470	Polypedilum (P.) illinoense	T	45	+					
85625	Rheotanytarsus sp	F	497	+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: <i>09/28/2020</i>		RM: 118.20	
Site ID: SRCSMZ		Location: <i>Southerly Mixing Zone</i>		Sample:			
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
00401	Spongillidae	F		+			
01801	Turbellaria	F		85			
01900	Nemertea	F		8			
03600	Oligochaeta	T		526 +			
04685	Placobdella ornata	MT		+			
05800	Caecidotea sp	T		16 +			
06700	Crangonyx sp	MT		+			
13510	Maccaffertium exiguum	MI		+			
13570	Maccaffertium terminatum	MI		68			
16700	Tricorythodes sp	MI		3 +			
17200	Caenis sp	F		+			
18100	Anthopotamus sp	MI		1 +			
21200	Calopteryx sp	F		+			
22300	Argia sp	F		91 +			
51206	Cynellus fraternus	F		352			
52200	Cheumatopsyche sp	F		22			
52521	Hydropsyche bidens or H. orris	MI		1			
52570	Hydropsyche simulans	MI		3			
52801	Potamyia flava	MI		4			
68901	Macronychus glabratus	F		1			
77750	Hayesomyia senata or Thienemannimyia norena	F		80			
82730	Chironomus (C.) decorus group	T		+			
82880	Cryptotendipes sp	F		+			
83040	Dicrotendipes neomodestus	F		121 +			
83300	Glyptotendipes (G.) sp	MT		4102 +			
84300	Phaenopsectra obediens group	F		+			
85625	Rheotanytarsus sp	F		80			
85840	Tanytarsus sepp	F		80			
93900	Elimia sp	MI		+			
95100	Physella sp	T		1			
96900	Ferrissia sp	F		64 +			
97710	Dreissena polymorpha	F		+			

No. Quantitative Taxa: 21 Total Taxa; 32
 No. Qualitative Taxa: 19 ICI: 16
 Number of Organisms: 5709 Qual EPT: 4
 Aquatic Life Use: **WWH** CWH Taxa: 0

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: <i>Scioto River</i>		Coll. Date: <i>09/28/2020</i>		RM: 120.10			
Site ID: SR11		Location: <i>at 665</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	68130	Helichus sp	F		+
01801	Turbellaria	F		+	68601	Ancyronyx variegata	F		+
01900	Nemertea	F		1	69400	Stenelmis sp	F		11 +
03360	Plumatella sp	F		1 +	74100	Simulium sp	F		4
03600	Oligochaeta	T		8 +	77120	Ablabesmyia mallochi	F		+
04666	Helobdella papillata	MT		+	77750	Hayesomyia senata or Thienemannimyia norena	F		78
04964	Erpobdella microstoma	MT		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		12
05800	Caecidotea sp	T		+	81240	Nanocladius (N.) distinctus	MT		18
06201	Hyalella azteca	F		+	81825	Rheocricotopus (Psilocricotopus) robacki	F		6
08250	Orconectes (Procericambarus) rusticus	F		+	82130	Thienemanniella similis	MI		8 +
11123	Labiobaetis dardanus	MI		+	82220	Tvetenia discoloripes group	MI		6
11130	Baetis intercalaris	F	454	+	83300	Glyptotendipes (G.) sp	MT		48
12200	Isonychia sp	MI		22 +	84300	Phaenopsectra obediens group	F		6
13000	Leucrocota sp	MI		+	84450	Polypedilum (Uresipedilum) flavum	F		72
13400	Stenacron sp	F		38 +	84540	Polypedilum (Tripodura) scalaenum group	F		18 +
13510	Maccaffertium exiguum	MI		69	85265	Cladotanytarsus vanderwulpi group sp 5	MI		+
13521	Stenonema femoratum	F		+	85625	Rheotanytarsus sp	F		275 +
13550	Maccaffertium mexicanum integrum	MI		2	85840	Tanytarsus sepp	F		18
13570	Maccaffertium terminatum	MI	193	+	87540	Hemerodromia sp	F		2
16700	Tricorythodes sp	MI		36 +	93900	Elimia sp	MI		9
17200	Caenis sp	F		+	95100	Physella sp	T		16
18100	Anthopotamus sp	MI		+	96900	Ferrissia sp	F		9 +
21200	Calopteryx sp	F		+	97601	Corbicula fluminea	F		6 +
21300	Hetaerina sp	F		+	98600	Sphaerium sp	F		+
22001	Coenagrionidae	T		+	99580	Obliquaria reflexa	MI		+
22300	Argia sp	F		5 +	99680	Leptodea fragilis	MI		+
42700	Belostoma sp	T		+					
50301	Chimarra aterrima	MI		+					
50315	Chimarra obscura	MI		4 +					
52200	Cheumatopsyche sp	F		514 +					
52430	Ceratopsyche morosa group	MI		3	No. Quantitative Taxa:	37	Total Taxa;		67
52521	Hydropsyche bidens or H. orris	MI		77 +	No. Qualitative Taxa:		49	ICI:	54
52570	Hydropsyche simulans	MI		417 +	Number of Organisms:	2583	Qual EPT:		20
52580	Hydropsyche valanis	MI		+	Aquatic Life Use:	WWH	CWH Taxa:		0
52801	Potamyia flava	MI		77 +					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		40					
53800	Hydroptila sp	F		+					
59415	Nectopsyche exquisita	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/24/2020		RM: 124.50			
Site ID: SR10		Location: Dst. I-270 South bridge		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	59970	Petrophila sp	MI		26 +
01200	Cordylophora caspia	MT		1	69400	Stenelmis sp	F		26 +
01320	Hydra sp	F		+	77120	Ablabesmyia mallochii	F		+
01801	Turbellaria	F		10 +	77130	Ablabesmyia rhamphe group	MT		+
03121	Paludicella articulata	MI		+	77750	Hayesomyia senata or Thienemannimyia norena	F		253 +
03337	Hyalinella punctata	MI		1 +	80410	Cricotopus (C.) sp	F		63
03360	Plumatella sp	F		1 +	80420	Cricotopus (C.) bicinctus	T		+
03451	Urnatella gracilis	MI		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		127
03600	Oligochaeta	T		264 +	81240	Nanocladius (N.) distinctus	MT		63
04615	Actinobdella inequiannulata	MT		+	82130	Thienemanniella similis	MI		192 +
04664	Helobdella stagnalis	T		+	83300	Glyptotendipes (G.) sp	MT		633 +
04666	Helobdella papillata	MT		+	84040	Parachironomus frequens	F		+
04930	Erpobdella sp	MT		+	84450	Polypedilum (Uresipedilum) flavum	F		1140 +
05800	Caecidotea sp	T		+	84470	Polypedilum (P.) illinoense	T		+
06201	Hyaella azteca	F		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
11118	Plauditus dubius	MI		8	85265	Cladotanytarsus vanderwulpi group sp 5	MI		+
11130	Baetis intercalaris	F		38 +	85625	Rheotanytarsus sp	F		3673 +
12200	Isonychia sp	MI		64 +	85800	Tanytarsus sp	F		+
13400	Stenacron sp	F		+	85840	Tanytarsus sepp	F		+
13510	Maccaffertium exiguum	MI		31	87540	Hemerodromia sp	F		1
13550	Maccaffertium mexicanum integrum	MI		3	93200	Hydrobiidae	F		+
13561	Maccaffertium pulchellum	MI		21 +	93900	Elimia sp	MI		65 +
13570	Maccaffertium terminatum	MI		244 +	96900	Ferrissia sp	F		26 +
16700	Tricorythodes sp	MI		607 +	97601	Corbicula fluminea	F		2
17200	Caenis sp	F		65 +	99100	Pyganodon grandis	F		+
21300	Hetaerina sp	F		9 +	99240	Lasmigona complanata	MI		+
22001	Coenagrionidae	T		+	99400	Quadrula quadrula	MI		+
22300	Argia sp	F		+	99640	Truncilla donaciformis	MI		+
23600	Aeshna sp	MT		+	99680	Leptodea fragilis	MI		+
24900	Gomphus sp	F		+	99830	Lampsilis fasciola	MI		+
26700	Macromia sp	MI		+					
42700	Belostoma sp	T		+					
51206	Cynellus fraternus	F		231 +					
52200	Cheumatopsyche sp	F		5521 +					
52521	Hydropsyche bidens or H. orris	MI		5723 +	No. Quantitative Taxa:	36	Total Taxa;	72	
52570	Hydropsyche simulans	MI		17	No. Qualitative Taxa:	62	ICI:	48	
52580	Hydropsyche valanis	MI		3 +	Number of Organisms:	19359	Qual EPT:	16	
52801	Potamyia flava	MI		198 +	Aquatic Life Use:	WWH	CWH Taxa:	0	
53400	Protoptila sp	I		+					
53800	Hydroptila sp	F		9 +					
59160	Ceraclea spongillovorax	MI		+					
59407	Nectopsyche candida	MI		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/24/2020		RM: 125.40			
Site ID: SR09		Location: 2nd Amer. Agg. Xing bridge, ust outfalls. (Fish zone dst.)				Sample:			
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	81240	Nanocladius (N.) distinctus	MT		+
01801	Turbellaria	F		11	82121	Thienemanniella lobapodema	F		16
03337	Hyalinella punctata	MI		+	82130	Thienemanniella similis	MI		37
03360	Plumatella sp	F		2 +	82824	Cryptochironomus ponderosus	F		+
03451	Urnatella gracilis	MI		8 +	83050	Dicrotendipes lucifer	MT		185
03600	Oligochaeta	T		146 +	83300	Glyptotendipes (G.) sp	MT		850 +
05800	Caecidotea sp	T		1 +	83310	Glyptotendipes (Heynotendipes) chelonia	MI		+
06700	Crangonyx sp	MT		8 +	84040	Parachironomus frequens	F		37 +
11123	Labiobaetis dardanus	MI		+	84300	Phaenopsectra obediens group	F		+
11130	Baetis intercalaris	F		28 +	84450	Polypedilum (Uresipedilum) flavum	F		518 +
11200	Callibaetis sp	MT		+	84470	Polypedilum (P.) illinoense	T		+
13400	Stenacron sp	F		37 +	84520	Polypedilum (Tripodura) halterale group	MT		74
13510	Maccaffertium exiguum	MI		39	85265	Cladotanytarsus vanderwulpi group sp 5	MI		+
13550	Maccaffertium mexicanum integrum	MI		14	85625	Rheotanytarsus sp	F		1146 +
13561	Maccaffertium pulchellum	MI		14 +	85800	Tanytarsus sp	F		37 +
13570	Maccaffertium terminatum	MI		46 +	85840	Tanytarsus sepp	F		+
16700	Tricorythodes sp	MI		376 +	87540	Hemerodromia sp	F		33
17200	Caenis sp	F		16 +	93200	Hydrobiidae	F		+
21200	Calopteryx sp	F		+	93900	Elimia sp	MI		26 +
21300	Hetaerina sp	F		+	95100	Physella sp	T		+
22001	Coenagrionidae	T		+	96900	Ferrissia sp	F		4 +
22300	Argia sp	F		10 +	98600	Sphaerium sp	F		+
51206	Cynellus fraternus	F		418 +	99400	Quadrula quadrula	MI		+
52200	Cheumatopsyche sp	F		1469 +	99680	Leptodea fragilis	MI		+
52430	Ceratopsyche morosa group	MI		1	99700	Potamilus alatus	MI		+
52560	Hydropsyche orris	MI		985 +					
52570	Hydropsyche simulans	MI		14 +					
52801	Potamyia flava	MI		43 +					
53800	Hydroptila sp	F		9 +	No. Quantitative Taxa:	42	Total Taxa;	65	
59415	Nectopsyche exquisita	MI		+	No. Qualitative Taxa:		53	ICI:	44
59500	Oecetis sp	F		16	Number of Organisms:	7028	Qual EPT:	15	
59970	Petrophila sp	MI		11 +	Aquatic Life Use:	WWH	CWH Taxa:	0	
69400	Stenelmis sp	F		10 +					
77120	Ablabesmyia mallochi	F		37 +					
77130	Ablabesmyia rhamphe group	MT		37 +					
77750	Hayesomyia senata or Thienemannimyia norena	F		185 +					
77800	Helopelopia sp	F		37					
80420	Cricotopus (C.) bicinctus	T		+					
80430	Cricotopus (C.) tremulus group	MT		+					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		37					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/24/2020		RM: 126.50	
Site ID: SR08		Location: Dst. Jackson Pike WWTP & Upst Kian Run				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
00401	Spongillidae	F		+	82130	Thienemanniella similis	MI 64 +
01801	Turbellaria	F		+	82730	Chironomus (C.) decorus group	T +
03360	Plumatella sp	F		1 +	83002	Dicrotendipes modestus	MT +
03451	Urnatella gracilis	MI		+	83040	Dicrotendipes neomodestus	F +
03600	Oligochaeta	T		400 +	83050	Dicrotendipes lucifer	MT +
04662	Helobdella fusca	T		+	83300	Glyptotendipes (G.) sp	MT 2472 +
04930	Erpobdella sp	MT		+	83310	Glyptotendipes (Heynotendipes) chelonia	MI +
05800	Caecidotea sp	T		+	84040	Parachironomus frequens	F 124 +
06700	Crangonyx sp	MT		+	84450	Polypedilum (Uresipedilum) flavum	F 1607 +
08601	Hydrachnidia	F		+	85625	Rheotanytarsus sp	F 2410 +
11130	Baetis intercalaris	F		248 +	85800	Tanytarsus sp	F 62 +
12200	Isonychia sp	MI		9	85821	Tanytarsus glabrescens group sp 7	F 124
13000	Leucrocuta sp	MI		+	85840	Tanytarsus sepp	F +
13400	Stenacron sp	F		+	87501	Empididae	F 1
13550	Maccaffertium mexicanum integrum	MI		1	93200	Hydrobiidae	F +
13561	Maccaffertium pulchellum	MI		28	93900	Elimia sp	MI +
13570	Maccaffertium terminatum	MI		47 +	96900	Ferrissia sp	F +
16700	Tricorythodes sp	MI		40 +	96930	Laevapex fuscus	MT +
17200	Caenis sp	F		+			
22001	Coenagrionidae	T		+	No. Quantitative Taxa:	30	Total Taxa; 59
22300	Argia sp	F		+	No. Qualitative Taxa:	50	ICI: 40
45400	Trichocorixa sp	MT		+	Number of Organisms:	20774	Qual EPT: 12
51206	Cynellus fraternus	F		338 +	Aquatic Life Use:	WWH	CWH Taxa: 0
52200	Cheumatopsyche sp	F		7220 +			
52430	Ceratopsyche morosa group	MI		99			
52521	Hydropsyche bidens or H. orris	MI		4839 +			
52570	Hydropsyche simulans	MI		117			
52580	Hydropsyche valanis	MI		3 +			
52801	Potamyia flava	MI		105 +			
53800	Hydroptila sp	F		2 +			
59970	Petrophila sp	MI		1 +			
68075	Psephenus herricki	MI		+			
68201	Scirtidae	F		+			
69400	Stenelmis sp	F		9 +			
77120	Ablabesmyia mallochi	F		+			
77130	Ablabesmyia rhamphe group	MT		+			
77800	Helopelopia sp	F		62 +			
78750	Rheopelopia paramaculipennis	MI		+			
80360	Corynoneura floridaensis	MI		32			
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		124			
81240	Nanocladius (N.) distinctus	MT		185 +			

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: <i>09/23/2020</i>		RM: 127.00	
Site ID: SRJPMZ		Location: <i>Jackson Pike Mixing Zone</i>		Sample:			
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
00401	Spongillidae	F	+				
01320	Hydra sp	F	9	No. Quantitative Taxa: 22 Total Taxa; 36			
01801	Turbellaria	F	2 +	No. Qualitative Taxa: 24 ICI: 16			
01900	Nemertea	F	17	Number of Organisms: 10503 Qual EPT: 2			
03600	Oligochaeta	T	6144 +	Aquatic Life Use: WWH CWH Taxa: 0			
04615	Actinobdella inequiannulata	MT	+				
04664	Helobdella stagnalis	T	+				
04687	Placobdella parasitica	MT	+				
05800	Caecidotea sp	T	151 +				
06001	Amphipoda		32				
06700	Crangonyx sp	MT	+				
16700	Tricorythodes sp	MI	+				
17200	Caenis sp	F	8 +				
22001	Coenagrionidae	T	+				
22300	Argia sp	F	+				
43300	Ranatra sp	F	+				
45100	Palmacorixa sp	F	+				
51206	Cyrnellus fraternus	F	42				
53800	Hydroptila sp	F	86				
64800	Uvarus sp	MT	+				
77130	Ablabesmyia rhamphe group	MT	77				
78655	Procladius (Holotanypus) sp	MT	+				
80420	Cricotopus (C.) bicinctus	T	+				
80510	Cricotopus (Isocladius) sylvestris group	T	39 +				
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	39				
82730	Chironomus (C.) decorus group	T	39 +				
82770	Chironomus (C.) riparius group	T	308 +				
83002	Dicrotendipes modestus	MT	+				
83040	Dicrotendipes neomodestus	F	39 +				
83050	Dicrotendipes lucifer	MT	77				
83051	Dicrotendipes simpsoni	T	231				
83300	Glyptotendipes (G.) sp	MT	2851 +				
84450	Polypedilum (Uresipedilum) flavum	F	154				
85821	Tanytarsus glabrescens group sp 7	F	116				
95100	Physella sp	T	1 +				
96900	Ferrissia sp	F	41				

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/23/2020		RM: 127.40			
Site ID: SR08.2		Location: Ust. OARS Outfall; ust. JP 001		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	83310	Glyptotendipes (Heynotendipes) chelonia	MI		+
01801	Turbellaria	F		8 +	84450	Polypedilum (Uresipedilum) flavum	F		392
03360	Plumatella sp	F		1	85625	Rheotanytarsus sp	F		785
03451	Urnatella gracilis	MI		1 +	85800	Tanytarsus sp	F		+
03600	Oligochaeta	T		800 +	85821	Tanytarsus glabrescens group sp 7	F		26
04615	Actinobdella inequiannulata	MT		+	85840	Tanytarsus sepp	F		+
04666	Helobdella papillata	MT		+	93900	Elimia sp	MI		1 +
04930	Erpobdella sp	MT		+	96900	Ferrissia sp	F		1
05800	Caecidotea sp	T		+	97601	Corbicula fluminea	F		8
06700	Crangonyx sp	MT		+	98600	Sphaerium sp	F		+
11119	Plauditus dubius or P. virilis	I		8	99680	Leptodea fragilis	MI		+
11130	Baetis intercalaris	F		21 +	No. Quantitative Taxa: 33 Total Taxa; 53 No. Qualitative Taxa: 36 ICI: 34 Number of Organisms: 5202 Qual EPT: 10 Aquatic Life Use: WWH CWH Taxa: 0				
11200	Callibaetis sp	MT		+					
11650	Proclleon sp (w/ hindwing pads)	MI		+					
13400	Stenacron sp	F		1 +					
13550	Maccaffertium mexicanum integrum	MI		1					
13570	Maccaffertium terminatum	MI		1					
16700	Tricorythodes sp	MI		16 +					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
18600	Ephemera sp	MI		+					
21300	Hetaerina sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		16 +					
45100	Palmacorixa sp	F		+					
51206	Cynellus fraternus	F		1022 +					
52200	Cheumatopsyche sp	F		655					
52430	Ceratopsyche morosa group	MI		2					
52521	Hydropsyche bidens or H. orris	MI		400					
53800	Hydroptila sp	F		16 +					
69400	Stenelmis sp	F		1 +					
74100	Simulium sp	F		1					
77120	Ablabesmyia mallochi	F		52 +					
77130	Ablabesmyia rhamphe group	MT		26 +					
77800	Helopelopia sp	F		26					
78655	Procladius (Holotanypus) sp	MT		+					
80410	Cricotopus (C.) sp	F		52					
81240	Nanocladius (N.) distinctus	MT		78 +					
83040	Dicrotendipes neomodestus	F		26					
83050	Dicrotendipes lucifer	MT		78					
83051	Dicrotendipes simpsoni	T		26 +					
83300	Glyptotendipes (G.) sp	MT		654 +					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: <i>Scioto River</i>		Coll. Date: <i>09/23/2020</i>		RM: 127.70			
Site ID: SR07		Location: <i>Dst. 104</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	59970	Petrophila sp	MI		27 +
01320	Hydra sp	F		8	69400	Stenelmis sp	F		16 +
01801	Turbellaria	F		10 +	72501	Culicidae	MT		+
03121	Paludicella articulata	MI		+	74100	Simulium sp	F		1 +
03221	Pectinatella magnifica	F		+	77120	Ablabesmyia mallochi	F		+
03360	Plumatella sp	F		1 +	77130	Ablabesmyia rhamphe group	MT		38
03451	Urnatella gracilis	MI		1	77750	Hayesomyia senata or Thienemannimyia norena	F		152 +
03600	Oligochaeta	T		304 +	79085	Telopelopia okoboji	MI		+
04615	Actinobdella inequiannulata	MT		+	80310	Cardiocladius obscurus	MI		+
04666	Helobdella papillata	MT		+	80410	Cricotopus (C.) sp	F		+
05800	Caecidotea sp	T		+	80420	Cricotopus (C.) bicinctus	T		+
06201	Hyalella azteca	F		+	81240	Nanocladius (N.) distinctus	MT		114
08601	Hydrachnidia	F		+	81270	Nanocladius (N.) spiniplenus	F		76
11020	Acerpenna pygmaea	MI		46	82130	Thienemanniella similis	MI		139 +
11119	Plauditus dubius or P. virilis	I		+	82820	Cryptochironomus sp	F		+
11130	Baetis intercalaris	F		476 +	83158	Endochironomus nigricans	MT		+
11670	Proclleon viridoculare	MI		+	83300	Glyptotendipes (G.) sp	MT		417 +
12200	Isonychia sp	MI		1	84000	Parachironomus sp	MT		38
13000	Leucrocuta sp	MI		+	84010	Parachironomus "abortivus" (sensu Simpson & Bode, 1980)	MT		114
13400	Stenacron sp	F		26 +	84040	Parachironomus frequens	F		265
13510	Maccaffertium exiguum	MI		2	84450	Polypedilum (Uresipedilum) flavum	F		1780 +
13550	Maccaffertium mexicanum integrum	MI		2	84470	Polypedilum (P.) illinoense	T		+
13561	Maccaffertium pulchellum	MI		29 +	85264	Cladotanytarsus vanderwulpi group sp 4	MI		+
13570	Maccaffertium terminatum	MI		50 +	85625	Rheotanytarsus sp	F		984 +
16700	Tricorythodes sp	MI		26 +	85800	Tanytarsus sp	F		+
17200	Caenis sp	F		1 +	93200	Hydrobiidae	F		+
18100	Anthopotamus sp	MI		+	93900	Elimia sp	MI		136 +
22300	Argia sp	F		9 +	95100	Physella sp	T		1
23600	Aeshna sp	MT		+	96900	Ferrissia sp	F		8
44501	Corixidae	F		+	96930	Laevapex fuscus	MT		+
51206	Cynellus fraternus	F		105 +	98600	Sphaerium sp	F		+
52200	Cheumatopsyche sp	F		2523 +	99680	Leptodea fragilis	MI		+
52430	Ceratopsyche morosa group	MI		2	99780	Ligumia recta	MI		+
52521	Hydropsyche bidens or H. orris	MI		4616 +					
52570	Hydropsyche simulans	MI		7					
52580	Hydropsyche valanis	MI		2 +					
52801	Potamyia flava	MI		218 +	No. Quantitative Taxa:	43	Total Taxa;	75	
53501	Hydroptilidae	F		1	No. Qualitative Taxa:	57	ICI:	44	
53800	Hydroptila sp	F		+	Number of Organisms:	12781	Qual EPT:	18	
59160	Ceraclea spongillovorax	MI		+	Aquatic Life Use:	WWH	CWH Taxa:	0	
59415	Nectopsyche exquisita	MI		1 +					
59500	Oecetis sp	F		8					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/25/2020		RM: 129.00			
Site ID: SR06		Location: Dst. Greenlawn Ave. dam		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+		N. (N.) "rectinervis"			
01801	Turbellaria	F		2 +	81240	Nanocladius (N.) distinctus	MT		98
03360	Plumatella sp	F		1 +	82130	Thienemanniella similis	MI		49 +
03451	Urnatella gracilis	MI		32 +	83000	Dicrotendipes sp	F		49
03600	Oligochaeta	T		160 +	83040	Dicrotendipes neomodestus	F		73 +
04615	Actinobdella inequiannulata	MT		+	83300	Glyptotendipes (G.) sp	MT		1052 +
04964	Erpobdella microstoma	MT		+	84450	Polypedilum (Uresipedilum) flavum	F		514 +
05800	Caecidotea sp	T		+	85625	Rheotanytarsus sp	F		979 +
06201	Hyalella azteca	F		+	85800	Tanytarsus sp	F		+
06700	Crangonyx sp	MT		+	87540	Hemerodromia sp	F		16
08250	Orconectes (Procericambarus) rusticus	F		+	93900	Elimia sp	MI		+
08601	Hydrachnidia	F		+	96900	Ferrissia sp	F		+
11130	Baetis intercalaris	F		17 +	97601	Corbicula fluminea	F		+
11670	Procloeon viridoculare	MI		+	98600	Sphaerium sp	F		+
12200	Isonychia sp	MI		+	99680	Leptodea fragilis	MI		+
13100	Nixe sp	MI		+	99700	Potamilus alatus	MI		+
13400	Stenacron sp	F		25 +	No. Quantitative Taxa: 25		Total Taxa; 56		
13510	Maccaffertium exiguum	MI		+	No. Qualitative Taxa: 50		ICI: 40		
13570	Maccaffertium terminatum	MI		25 +	Number of Organisms: 9607		Qual EPT: 17		
16700	Tricorythodes sp	MI		17 +	Aquatic Life Use: WWH		CWH Taxa: 0		
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		+					
26700	Macromia sp	MI		+					
27400	Neurocordulia sp	F		+					
51206	Cynellus fraternus	F		1276 +					
52200	Cheumatopsyche sp	F		2185 +					
52430	Ceratopsyche morosa group	MI		1 +					
52521	Hydropsyche bidens or H. orris	MI		2844 +					
52580	Hydropsyche valanis	MI		45 +					
52801	Potamyia flava	MI		1					
59160	Ceraclea spongillovorax	MI		+					
59415	Nectopsyche exquisita	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
69400	Stenelmis sp	F		+					
77120	Ablabesmyia mallochi	F		+					
77500	Conchapelopia sp	F		24					
77750	Hayesomyia senata or Thienemannimyia norena	F		24 +					
81231	Nanocladius (N.) crassicornus or	F		98					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: <i>10/01/2020</i>		RM: 130.10	
Site ID: SR05		Location: <i>Ust. Greenlawn Ave. dam</i>		Sample:			
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
00401	Spongillidae	F	+				
01320	Hydra sp	F	32	No. Quantitative Taxa:	23	Total Taxa;	40
03221	Pectinatella magnifica	F	1	No. Qualitative Taxa:	24	ICI:	16
03360	Plumatella sp	F	1	Number of Organisms:	7633	Qual EPT:	2
03451	Urnatella gracilis	MI	16	Aquatic Life Use:	MWH	CWH Taxa:	0
03600	Oligochaeta	T	264 +				
04615	Actinobdella inequiannulata	MT	+				
04682	Placobdella montifera	MT	+				
04964	Erpobdella microstoma	MT	+				
05800	Caecidotea sp	T	+				
06201	Hyalella azteca	F	1 +				
08601	Hydrachnidia	F	+				
11200	Callibaetis sp	MT	+				
13400	Stenacron sp	F	32				
13521	Stenonema femoratum	F	2				
16700	Tricorythodes sp	MI	2				
17200	Caenis sp	F	25 +				
22001	Coenagrionidae	T	1 +				
22300	Argia sp	F	2 +				
43300	Ranatra sp	F	+				
49101	Sisyridae	F	+				
51206	Cymellus fraternus	F	68				
54200	Orthotrichia sp	F	32				
60900	Peltodytes sp	MT	+				
68700	Dubiraphia sp	F	+				
77120	Ablabesmyia mallochi	F	+				
77355	Clinotanypus pinguis	MT	+				
78655	Procladius (Holotanypus) sp	MT	+				
80410	Cricotopus (C.) sp	F	82				
81240	Nanocladius (N.) distinctus	MT	82 +				
83000	Dicrotendipes sp	F	164				
83040	Dicrotendipes neomodestus	F	328				
83050	Dicrotendipes lucifer	MT	82				
83051	Dicrotendipes simpsoni	T	410				
83300	Glyptotendipes (G.) sp	MT	5906 +				
85821	Tanytarsus glabrescens group sp 7	F	82				
92615	Cipangopaludina japonica	MT	+				
95100	Physella sp	T	+				
96120	Menetus (Micromenetus) dilatatus	MT	18				
99680	Leptodea fragilis	MI	+				

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 10/02/2020		RM: 132.10			
Site ID: SR04		Location: dst. RR bridge		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	77120	Ablabesmyia mallochi	F		+
01801	Turbellaria	F		46 +	77800	Helopelopia sp	F		34
03360	Plumatella sp	F		1	78750	Rheopelopia paramaculipennis	MI		+
03600	Oligochaeta	T		40 +	80360	Corynoneura floridaensis	MI		32
04615	Actinobdella inequiannulata	MT		+	80410	Cricotopus (C.) sp	F		+
04666	Helobdella papillata	MT		+	82130	Thienemanniella similis	MI		176
05800	Caecidotea sp	T		+	82141	Thienemanniella xena	F		16
06201	Hyalella azteca	F		+	84450	Polypedilum (Uresipedilum) flavum	F		677
06700	Crangonyx sp	MT		+	85625	Rheotanytarsus sp	F		2233 +
08250	Orconectes (Procericambarus) rusticus	F		+	85800	Tanytarsus sp	F		+
08601	Hydrachnidia	F		+	87540	Hemerodromia sp	F		34
11118	Plauditus dubius	MI		2	93900	Elimia sp	MI		70 +
11130	Baetis intercalaris	F		851 +	94400	Fossaria sp	MT		+
11650	Procloeon sp (w/ hindwing pads)	MI		+	96900	Ferrissia sp	F		18
12200	Isonychia sp	MI		25	97601	Corbicula fluminea	F		+
13000	Leucrocuta sp	MI		+	99240	Lasmigona complanata	MI		+
13400	Stenacron sp	F		182 +	No. Quantitative Taxa: 29 Total Taxa; 58				
13510	Maccaffertium exiguum	MI		24					No. Qualitative Taxa: 43 ICI: 52
13521	Stenonema femoratum	F		20 +	Number of Organisms: 6359 Qual EPT: 17				
13561	Maccaffertium pulchellum	MI		104 +	Aquatic Life Use: MWH CWH Taxa: 0				
13570	Maccaffertium terminatum	MI		95 +					
16700	Tricorythodes sp	MI		214 +					
17200	Caenis sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		+					
24900	Gomphus sp	F		+					
43300	Ranatra sp	F		+					
50315	Chimarra obscura	MI		1					
51206	Cynellus fraternus	F		2					
52200	Cheumatopsyche sp	F		1137 +					
52430	Ceratopsyche morosa group	MI		263 +					
52570	Hydropsyche simulans	MI		2					
52580	Hydropsyche valanis	MI		+					
52801	Potamyia flava	MI		28					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		+					
58505	Helicopsyche borealis	MI		+					
59160	Ceraclea spongillovorax	MI		+					
59415	Nectopsyche exquisita	MI		1 +					
59970	Petrophila sp	MI		31 +					
68075	Psephenus herricki	MI		+					
69400	Stenelmis sp	F		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/18/2020		RM: 132.60			
Site ID: SR03		Location: Dst. I-670 bridge		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	85625	Rheotanytarsus sp	F	1631	+
01801	Turbellaria	F	357	+	85800	Tanytarsus sp	F		+
03360	Plumatella sp	F	1	+	87540	Hemerodromia sp	F	25	+
03600	Oligochaeta	T	32	+	93900	Elimia sp	MI		+
04615	Actinobdella inequiannulata	MT		+	95100	Physella sp	T		+
08250	Orconectes (Procericambarus) rusticus	F		+	96900	Ferrissia sp	F	25	+
11130	Baetis intercalaris	F	992	+	97601	Corbicula fluminea	F		+
12200	Isonychia sp	MI	4	+	No. Quantitative Taxa: 28 Total Taxa; 47 No. Qualitative Taxa: 38 ICI: 46 Number of Organisms: 6218 Qual EPT: 16 Aquatic Life Use: WWH CWH Taxa: 0				
13000	Leucrocuta sp	MI		+					
13100	Nixe sp	MI		+					
13400	Stenacron sp	F	84	+					
13521	Stenonema femoratum	F	4	+					
13561	Maccaffertium pulchellum	MI	65	+					
13570	Maccaffertium terminatum	MI	69	+					
16700	Tricorythodes sp	MI	374	+					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
22300	Argia sp	F	1	+					
50315	Chimarra obscura	MI		+					
52200	Cheumatopsyche sp	F	836	+					
52430	Ceratopsyche morosa group	MI	981	+					
52521	Hydropsyche bidens or H. orris	MI	5						
52570	Hydropsyche simulans	MI	3						
52580	Hydropsyche valanis	MI	2						
53501	Hydroptilidae	F	9	+					
59160	Ceraclea spongillovorax	MI	1						
59415	Nectopsyche exquisita	MI		+					
59970	Petrophila sp	MI	21	+					
69400	Stenelmis sp	F		+					
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or Thienemannimyia norena	F	25						
78140	Labrundinia pilosella	F	16						
78450	Nilotanypus fimbriatus	F	16						
80410	Cricotopus (C.) sp	F		+					
80420	Cricotopus (C.) bicinctus	T	51						
82130	Thienemanniella similis	MI	104						
84450	Polypedilum (Uresipedilum) flavum	F	484	+					
84540	Polypedilum (Tripodura) scalaenum group	F		+					
85265	Cladotanytarsus vanderwulpi group sp 5	MI		+					
85500	Paratanytarsus sp	F		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/18/2020		RM: 133.40			
Site ID: SR02		Location: dst. Dublin Rd. WTP dam		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	80410	Cricotopus (C.) sp	F		21
01320	Hydra sp	F		41	80420	Cricotopus (C.) bicinctus	T		+
01801	Turbellaria	F		148 +	82101	Thienemanniella taurocapita	MI		16
01900	Nemertea	F		32	82130	Thienemanniella similis	MI		16
03360	Plumatella sp	F		1	83040	Dicretendipes neomodestus	F		61 +
03600	Oligochaeta	T		42 +	83051	Dicretendipes simpsoni	T		21 +
04615	Actinobdella inequiannulata	MT		+	83300	Glyptotendipes (G.) sp	MT		42
05800	Caecidotea sp	T		+	84040	Parachironomus frequens	F		21
06201	Hyalella azteca	F		+	84450	Polypedilum (Uresipedilum) flavum	F		1186 +
06700	Crangonyx sp	MT		+	84470	Polypedilum (P.) illinoense	T		+
08601	Hydrachnidia	F		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
11020	Acerpenna pygmaea	MI		7	85625	Rheotanytarsus sp	F		635
11130	Baetis intercalaris	F		1170 +	85800	Tanytarsus sp	F		+
11200	Callibaetis sp	MT		+	85821	Tanytarsus glabrescens group sp 7	F		85
11650	Procloeon sp (w/ hindwing pads)	MI		+	87540	Hemerodromia sp	F		66
13000	Leucrocuta sp	MI		+	93900	Elimia sp	MI		5 +
13400	Stenacron sp	F		105 +	96900	Ferrissia sp	F		66
13521	Stenonema femoratum	F		7 +	97601	Corbicula fluminea	F		+
13550	Maccaffertium mexicanum integrum	MI		3					
13561	Maccaffertium pulchellum	MI		31	No. Quantitative Taxa:	35	Total Taxa:		60
13570	Maccaffertium terminatum	MI		10	No. Qualitative Taxa:		39	ICI:	46
16700	Tricorythodes sp	MI		285 +	Number of Organisms:	6246	Qual EPT:		12
17200	Caenis sp	F		+	Aquatic Life Use:	WWH	CWH Taxa:		0
22001	Coenagrionidae	T		+					
22300	Argia sp	F		+					
24107	Nasiaeschna pentacantha	MT		+					
42700	Belostoma sp	T		+					
51206	Cymellus fraternus	F		2					
52200	Cheumatopsyche sp	F		1617 +					
52430	Ceratopsyche morosa group	MI		204 +					
52500	Hydropsyche sp			48					
53800	Hydroptila sp	F		224					
54160	Ochrotrichia sp	MI		3					
59415	Nectopsyche exquisita	MI		+					
59520	Oecetis cinerascens	F		+					
59970	Petrophila sp	MI		3 +					
69400	Stenelmis sp	F		+					
72700	Anopheles sp	F		+					
74100	Simulium sp	F		1					
77120	Ablabesmyia mallochi	F		+					
77800	Helopelopia sp	F		21 +					
80310	Cardiocladius obscurus	MI		+					

Table C-6. Macroinvertebrate taxa for sites in the Scioto River mainstem collected by MBI in 2020.

River Code: 02-001		River: Scioto River		Coll. Date: 09/18/2020		RM: 136.60			
Site ID: SR01		Location: <i>Dst. 5th Ave. adj. to old gravel pits</i>				Sample:			
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00653	Eunapius fragilis	F		+	81240	Nanocladius (N.) distinctus	MT		12
01200	Cordylophora caspia	MT		1	81825	Rheocricotopus (Psilocricotopus) robacki	F		3
01320	Hydra sp	F		36	82820	Cryptochironomus sp	F		+
01801	Turbellaria	F	918	+	83040	Dicrotendipes neomodestus	F		+
01900	Nemertea	F		2 +	83051	Dicrotendipes simpsoni	T		3
03360	Plumatella sp	F		1 +	83158	Endochironomus nigricans	MT		+
03600	Oligochaeta	T	388	+	83300	Glyptotendipes (G.) sp	MT		15
04666	Helobdella papillata	MT		1 +	84040	Parachironomus frequens	F		3
04930	Erpobdella sp	MT		+	84060	Parachironomus pectinatellae	MI		3
06201	Hyalella azteca	F		6 +	84450	Polypedilum (Uresipedilum) flavum	F		224 +
06700	Crangonyx sp	MT		+	84470	Polypedilum (P.) illinoense	T		3
08250	Orconectes (Procericambarus) rusticus	F		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
08601	Hydrachnidia	F		+	85625	Rheotanytarsus sp	F		3
11020	Acerpenna pygmaea	MI		26	85800	Tanytarsus sp	F		+
11130	Baetis intercalaris	F	482	+	93900	Elimia sp	MI		72 +
13000	Leucrocota sp	MI		1 +	95100	Physella sp	T		+
13400	Stenacron sp	F	472	+	96900	Ferrissia sp	F		37 +
13521	Stenonema femoratum	F		3 +	97601	Corbicula fluminea	F		+
13561	Maccaffertium pulchellum	MI		89 +					
16700	Tricorythodes sp	MI		88 +					
17200	Caenis sp	F		+					
22300	Argia sp	F		4 +	No. Quantitative Taxa:	38	Total Taxa;		58
28208	Erythemis simplicicollis	MT		1	No. Qualitative Taxa:		41	ICI:	34
42700	Belostoma sp	T		+	Number of Organisms:	4634	Qual EPT:		10
43300	Ranatra sp	F		+	Aquatic Life Use:		CWH Taxa:		0
44501	Corixidae	F		+					
52200	Cheumatopsyche sp	F	1671	+					
52430	Ceratopsyche morosa group	MI		22 +					
53800	Hydroptila sp	F		2 +					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
69400	Stenelmis sp	F		4 +					
74100	Simulium sp	F		+					
77120	Ablabesmyia mallochi	F		+					
77750	Hayesomyia senata or Thienemannimyia norena	F		3					
77800	Helopelopia sp	F		3 +					
78450	Nilotanypus fimbriatus	F		2					
80370	Corynoneura lobata	F		18					
80420	Cricotopus (C.) bicinctus	T		3					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		9					

APPENDIX C: Olentangy River Mainstem Macroinvertebrate Assemblage
C-7: Olentangy River ICI Metrics and ICI Scores
C-8: Olentangy River Macroinvertebrate Taxa Grand (all sites combined)
C-9: Olentangy River Macroinvertebrate Taxa by Site

Appendix Table C-7. ICI metrics and values in the Olentangy River mainstem during 2020.

Site_ID	River Mile	Drainage		Number of			Percent:						Qual. EPT	ICI or Narrative
		Area (sq mi)	Total Taxa	Mayfly Taxa	Caddisfly Taxa	Dipteran Taxa	Mayflies	Caddisflies	Tanytarsini	Other Dipt/NI	Tolerant Organisms			
Olentangy River (02-400)														
Year: 2020														
OLN05	14.90	482.0	44(6)	7(4)	6(6)	20(6)	30.2(6)	40.9(6)	5.8(2)	17.9(6)	1.3(6)	28(6)	54	
OLN07	13.30	489.0	48(6)	6(4)	5(6)	21(6)	44.3(6)	37.5(6)	1.4(2)	13.3(6)	0.2(6)	25(6)	54	
OLN08	11.90	490.0	51(6)	9(6)	7(6)	20(6)	22.9(4)	56.3(6)	0.7(2)	17.9(6)	0.6(6)	29(6)	54	
OLN09	8.50	510.0	45(6)	10(6)	6(6)	18(6)	43.4(6)	31.7(6)	5.8(2)	17.8(6)	0.1(6)	21(6)	56	
OLN10	7.00	516.0	52(6)	9(6)	5(4)	21(6)	34.5(6)	24.1(4)	2.0(2)	33.2(2)	2.5(6)	22(6)	48	
OLN11	5.50	529.0	38(6)	5(2)	2(2)	17(6)	15.1(4)	0.3(2)	6.7(2)	73.8(0)	12.5(0)	2(0)	24	
OLN12	4.50	529.0	28(4)	4(2)	2(2)	13(4)	2.7(2)	0.8(2)	4.5(2)	90.8(0)	13.5(0)	2(0)	18	
OLN01	3.90	535.0	35(6)	7(4)	8(6)	13(4)	18.3(4)	65.3(6)	1.5(2)	14.3(6)	0.3(6)	16(4)	48	
OLN02	2.00	540.0	32(4)	10(6)	4(4)	10(4)	37.4(6)	37.6(6)	5.4(2)	18.6(6)	0.0(6)	19(6)	50	
OLN03	1.70	542.0										21	E	
OLN04	0.20	543.0	36(6)	8(4)	4(4)	12(4)	26.3(4)	60.5(6)	1.5(2)	10.5(6)	0.1(6)	14(4)	46	

Narrative Codes, VP - Very Poor, P - Poor, F - Fair, MG - Marginally Good, G - Good, E - Excellent, PHW3A - Spring Water Type A, PHW2 - Small Drainage Warm Water Stream

Appendix Table C-8 . Macroinvertebrate taxa results for all Olentnagy River mainstem sites combined in 2020.

Taxa Code	Taxa Name	Tolerance	HD Abundance	HD Percent	Qualitative Sample	Collection Frequency
52200	<i>Cheumatopsyche sp</i>	F	7985	23.73%	9	11
16700	<i>Tricorythodes sp</i>	MI	1472	4.37%	9	11
01801	<i>Turbellaria</i>	F	1199	3.56%	8	11
13400	<i>Stenacron sp</i>	F	408	1.21%	10	11
03600	<i>Oligochaeta</i>	T	352	1.05%	11	11
22300	<i>Argia sp</i>	F	77	0.23%	11	11
22001	<i>Coenagrionidae</i>	T	4	0.01%	11	11
06201	<i>Hyaella azteca</i>	F	1	0.00%	11	11
11130	<i>Baetis intercalaris</i>	F	4025	11.96%	9	10
93900	<i>Elimia sp</i>	MI	295	0.88%	10	10
87540	<i>Hemerodromia sp</i>	F	135	0.40%	0	10
97601	<i>Corbicula fluminea</i>	F	8	0.02%	10	10
52430	<i>Ceratopsyche morosa group</i>	MI	5677	16.87%	9	9
84450	<i>Polypedilum (Uresipedilum) flavum</i>	F	2084	6.19%	8	9
53400	<i>Protophila sp</i>	I	1034	3.07%	9	9
85625	<i>Rheotanytarsus sp</i>	F	726	2.16%	0	9
69400	<i>Stenelmis sp</i>	F	255	0.76%	9	9
13570	<i>Maccaffertium terminatum</i>	MI	214	0.64%	9	9
34715	<i>Agnetina flavescens</i>	I	151	0.45%	8	9
13000	<i>Leucrocuta sp</i>	MI	33	0.10%	8	9
68075	<i>Psephenus herricki</i>	MI	13	0.04%	9	9
84470	<i>Polypedilum (P.) illinoense</i>	T	9	0.03%	7	9
59970	<i>Petrophila sp</i>	MI	4	0.01%	9	9
59415	<i>Nectopsyche exquisita</i>	MI	1	0.00%	9	9
13561	<i>Maccaffertium pulchellum</i>	MI	2107	6.26%	8	8
11118	<i>Plauditus dubius</i>	MI	184	0.55%	6	8
82220	<i>Tvetenia discoloripes group</i>	MI	124	0.37%	1	8
12200	<i>Isonychia sp</i>	MI	82	0.24%	4	8
01900	<i>Nemertea</i>	F	75	0.22%	1	8
96900	<i>Ferrissia sp</i>	F	31	0.09%	8	8
84540	<i>Polypedilum (Tripodura) scalaenum</i>	F	27	0.08%	6	8
17200	<i>Caenis sp</i>	F	23	0.07%	6	8
96930	<i>Laevapex fuscus</i>	MT	7	0.02%	6	8
05800	<i>Caecidotea sp</i>	T	6	0.02%	8	8
01320	<i>Hydra sp</i>	F	174	0.52%	0	7
82130	<i>Thienemanniella similis</i>	MI	169	0.50%	2	7
85821	<i>Tanytarsus glabrescens group sp 7</i>	F	164	0.49%	1	7
77800	<i>Helopelopia sp</i>	F	125	0.37%	5	7
50315	<i>Chimarra obscura</i>	MI	73	0.22%	7	7
58505	<i>Helicopsyche borealis</i>	MI	47	0.14%	7	7
85720	<i>Stempellinella fimbriata</i>	MI	44	0.13%	3	7
85840	<i>Tanytarsus sepp</i>	F	44	0.13%	2	7

Appendix Table C-8 . Macroinvertebrate taxa results for all Olentnagy River mainstem sites combined in 2020.

95100	<i>Physella sp</i>	T	9	0.03%	7	7
13521	<i>Stenonema femoratum</i>	F	9	0.03%	5	7
05900	<i>Lirceus sp</i>	MT	4	0.01%	6	7
81231	<i>Nanocladius (N.) crassicornus</i> or <i>N.</i>	F	62	0.18%	2	6
78450	<i>Nilotanypus fimbriatus</i>	F	54	0.16%	0	6
77750	<i>Hayesomyia senata</i> or <i>Thienemann</i>	F	43	0.13%	0	6
80370	<i>Corynoneura lobata</i>	F	38	0.11%	0	6
68601	<i>Ancyronyx variegata</i>	F	12	0.04%	2	6
21200	<i>Calopteryx sp</i>	F	3	0.01%	4	6
08601	<i>Hydrachnidia</i>	F	0	0.00%	6	6
13100	<i>Nixe sp</i>	MI	0	0.00%	6	6
16324	<i>Teloganopsis deficiens</i>	I	157	0.47%	0	5
11120	<i>Baetis flavistriga</i>	F	96	0.29%	4	5
85800	<i>Tanytarsus sp</i>	F	56	0.17%	4	5
80360	<i>Corynoneura floridaensis</i>	MI	56	0.17%	0	5
68901	<i>Macronychus glabratus</i>	F	35	0.10%	2	5
18100	<i>Anthopotamus sp</i>	MI	18	0.05%	4	5
65800	<i>Berosus sp</i>	MT	4	0.01%	2	5
53501	<i>Hydroptilidae</i>	F	2	0.01%	5	5
21300	<i>Hetaerina sp</i>	F	1	0.00%	5	5
00401	<i>Spongillidae</i>	F	0	0.00%	5	5
18619	<i>Ephemera simulans</i>	MI	0	0.00%	5	5
83040	<i>Dicrotendipes neomodestus</i>	F	552	1.64%	1	4
13510	<i>Maccaffertium exiguum</i>	MI	153	0.45%	1	4
52570	<i>Hydropsyche simulans</i>	MI	80	0.24%	0	4
52590	<i>Hydropsyche venularis</i>	MI	58	0.17%	3	4
52530	<i>Hydropsyche depravata</i> group	F	42	0.12%	3	4
82101	<i>Thienemanniella taurocapita</i>	MI	19	0.06%	0	4
81650	<i>Parametrioctenemus sp</i>	F	13	0.04%	0	4
04964	<i>Erpobdella microstoma</i>	MT	1	0.00%	4	4
06700	<i>Crangonyx sp</i>	MT	0	0.00%	4	4
44501	<i>Corixidae</i>	F	0	0.00%	4	4
59724	<i>Triaenodes injustus</i>	MI	0	0.00%	4	4
60900	<i>Peltodytes sp</i>	MT	0	0.00%	4	4
83300	<i>Glyptotendipes (G.) sp</i>	MT	131	0.39%	1	3
80410	<i>Cricotopus (C.) sp</i>	F	43	0.13%	2	3
84700	<i>Stenochironomus sp</i>	F	12	0.04%	1	3
81825	<i>Rheocricotopus (Psilocricotopus) ro</i>	F	12	0.04%	0	3
84210	<i>Paratendipes albimanus</i> or <i>P. duplic</i>	F	11	0.03%	2	3
74100	<i>Simulium sp</i>	F	10	0.03%	1	3
78750	<i>Rheopelopia paramaculipennis</i>	MI	7	0.02%	1	3
03360	<i>Plumatella sp</i>	F	1	0.00%	2	3
11200	<i>Callibaetis sp</i>	MT	0	0.00%	3	3
11670	<i>Proclleon viridoculare</i>	MI	0	0.00%	3	3

Appendix Table C-8 . Macroinvertebrate taxa results for all Olentnagy River mainstem sites combined in 2020.

18600	<i>Ephemera sp</i>	MI	0	0.00%	3	3
26700	<i>Macromia sp</i>	MI	0	0.00%	3	3
34300	<i>Neoperla clymene complex</i>	I	0	0.00%	3	3
43300	<i>Ranatra sp</i>	F	0	0.00%	3	3
57400	<i>Neophylax sp</i>	MI	0	0.00%	3	3
59720	<i>Triaenodes ignitus</i>	MI	0	0.00%	3	3
77120	<i>Ablabesmyia mallochi</i>	F	0	0.00%	3	3
78655	<i>Procladius (Holotanypus) sp</i>	MT	0	0.00%	3	3
82820	<i>Cryptochironomus sp</i>	F	0	0.00%	3	3
93200	<i>Hydrobiidae</i>	F	0	0.00%	3	3
84790	<i>Tribelos fuscicorne</i>	F	652	1.94%	1	2
83051	<i>Dicrotendipes simpsoni</i>	T	161	0.48%	0	2
80310	<i>Cardiocladius obscurus</i>	MI	69	0.21%	0	2
80440	<i>Cricotopus (C.) trifascia</i>	F	52	0.15%	0	2
51206	<i>Cynellus fraternus</i>	F	22	0.07%	1	2
53800	<i>Hydroptila sp</i>	F	17	0.05%	1	2
80420	<i>Cricotopus (C.) bicinctus</i>	T	14	0.04%	0	2
84490	<i>Polypedilum (Cerobregma) ontario</i>	MI	11	0.03%	0	2
50301	<i>Chimarra aterrima</i>	MI	9	0.03%	2	2
84460	<i>Polypedilum (P.) fallax group</i>	F	8	0.02%	0	2
78140	<i>Labrundinia pilosella</i>	F	5	0.01%	0	2
84300	<i>Phaenopsectra obediens group</i>	F	4	0.01%	1	2
84800	<i>Tribelos jucundum</i>	MT	2	0.01%	1	2
82141	<i>Thienemanniella xena</i>	F	2	0.01%	0	2
03000	<i>Ectoprocta</i>	F	1	0.00%	1	2
04666	<i>Helobdella papillata</i>	MT	0	0.00%	2	2
07840	<i>Cambarus (Cambarus) sciotensis</i>	MI	0	0.00%	2	2
27307	<i>Epitheca (Epicordulia) princeps</i>	MT	0	0.00%	2	2
45400	<i>Trichocorixa sp</i>	MT	0	0.00%	2	2
59110	<i>Ceraclea ancylus</i>	MI	0	0.00%	2	2
59740	<i>Triaenodes perna</i>	MI	0	0.00%	2	2
68708	<i>Dubiraphia vittata group</i>	F	0	0.00%	2	2
71900	<i>Tipula sp</i>	F	0	0.00%	2	2
81060	<i>Lopescladius sp</i>	MI	0	0.00%	2	2
84520	<i>Polypedilum (Tripodura) halterale g</i>	MT	0	0.00%	2	2
97710	<i>Dreissena polymorpha</i>	F	0	0.00%	2	2
83050	<i>Dicrotendipes lucifer</i>	MT	1038	3.09%	0	1
77130	<i>Ablabesmyia rhamphe group</i>	MT	22	0.07%	0	1
80413	<i>Cricotopus (Isocladius) sp "Ozarks"</i>	MT	12	0.04%	0	1
83055	<i>Dicrotendipes tritonus</i>		11	0.03%	0	1
81250	<i>Nanocladius (N.) minimus</i>	F	9	0.03%	0	1
54160	<i>Ochrotrichia sp</i>	MI	8	0.02%	0	1
77500	<i>Conchapelopia sp</i>	F	7	0.02%	0	1
78350	<i>Meropelopia sp</i>	F	6	0.02%	0	1

Appendix Table C-8 . Macroinvertebrate taxa results for all Olentnagy River mainstem sites combined in 2020.

80430	<i>Cricotopus (C.) tremulus group</i>	MT	6	0.02%	0	1
80350	<i>Corynoneura sp</i>		4	0.01%	0	1
80470	<i>Cricotopus (C.) or Orthocladius (O.)</i>		4	0.01%	0	1
11020	<i>Acerpenna pygmaea</i>	MI	2	0.01%	0	1
68700	<i>Dubiraphia sp</i>	F	2	0.01%	0	1
79085	<i>Telopelopia okoboji</i>	MI	2	0.01%	0	1
80363	<i>Corynoneura sp 12</i>	MI	2	0.01%	0	1
84020	<i>Parachironomus carinatus</i>	F	2	0.01%	0	1
84315	<i>Phaenopsectra flavipes</i>	MT	2	0.01%	0	1
03451	<i>Urnatella gracilis</i>	MI	1	0.00%	0	1
59510	<i>Oecetis avara</i>	I	1	0.00%	0	1
68025	<i>Ectopria sp</i>	F	1	0.00%	0	1
69000	<i>Microcyloepus pusillus</i>	MI	1	0.00%	0	1
89001	<i>Sciomyzidae</i>	MT	1	0.00%	0	1
96120	<i>Menetus (Micromenetus) dilatatus</i>	MT	1	0.00%	0	1
04510	<i>Hirudinida</i>	MT	0	0.00%	1	1
04601	<i>Glossiphoniidae</i>	MT	0	0.00%	1	1
04662	<i>Helobdella fusca</i>	T	0	0.00%	1	1
04664	<i>Helobdella stagnalis</i>	T	0	0.00%	1	1
04901	<i>Erpobdellidae</i>	MT	0	0.00%	1	1
08250	<i>Orconectes (Procericambarus) rustici</i>	F	0	0.00%	1	1
11150	<i>Labiobaetis propinquus</i>	MI	0	0.00%	1	1
11250	<i>Neocloeon sp. (Centroptilum sp, w/</i>	MI	0	0.00%	1	1
11650	<i>Procloeon sp (w/ hindwing pads)</i>	MI	0	0.00%	1	1
24107	<i>Nasiaeschna pentacantha</i>	MT	0	0.00%	1	1
24600	<i>Arigomphus sp</i>	MT	0	0.00%	1	1
25010	<i>Hagenius brevistylus</i>	F	0	0.00%	1	1
27001	<i>Corduliidae</i>		0	0.00%	1	1
28500	<i>Libellula sp</i>	MT	0	0.00%	1	1
45000	<i>Hesperocorixa sp</i>	T	0	0.00%	1	1
59100	<i>Ceraclea sp</i>	MI	0	0.00%	1	1
59407	<i>Nectopsyche candida</i>	MI	0	0.00%	1	1
59700	<i>Triaenodes sp</i>	MI	0	0.00%	1	1
64050	<i>Liodessus sp</i>	MT	0	0.00%	1	1
68130	<i>Helichus sp</i>	F	0	0.00%	1	1
68201	<i>Scirtidae</i>	F	0	0.00%	1	1
68707	<i>Dubiraphia quadrinotata</i>	F	0	0.00%	1	1
78680	<i>Procladius (Psilotanytus) bellus</i>	MT	0	0.00%	1	1
82121	<i>Thienemanniella lobapodema</i>	F	0	0.00%	1	1
82710	<i>Chironomus (C.) sp</i>	MT	0	0.00%	1	1
82730	<i>Chironomus (C.) decorus group</i>	T	0	0.00%	1	1
82822	<i>Cryptochironomus eminentia</i>	F	0	0.00%	1	1
84118	<i>Paracladopelma undine</i>	MI	0	0.00%	1	1
84155	<i>Paralauterborniella nigrohalteralis</i>	F	0	0.00%	1	1

Appendix Table C-8 . Macroinvertebrate taxa results for all Olentnagy River mainstem sites combined in 2020.

84888	<i>Xenochironomus xenolabis</i>	F	0	0.00%	1	1
86900	<i>Myxosargus sp</i>	MT	0	0.00%	1	1
92516	<i>Campeloma decisum</i>	F	0	0.00%	1	1
98600	<i>Sphaerium sp</i>	F	0	0.00%	1	1
99280	<i>Lasmigona costata</i>	MI	0	0.00%	1	1
99560	<i>Ptychobranthus fasciolaris</i>	MI	0	0.00%	1	1
99860	<i>Lampsilis radiata luteola</i>	MI	0	0.00%	1	1
99880	<i>Lampsilis cardium</i>	MI	0	0.00%	1	1
	Total Abundance		33646			
	Number of Samples		11			
	HD Taxa		109			
	Qualitative Taxa		114			
	Total Taxa		182			

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/25/2020		RM: 0.20			
Site ID: OLN04		Location: <i>ust. Confluence with Scioto River</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	80410	Cricotopus (C.) sp	F		+
01801	Turbellaria	F	105	+	80420	Cricotopus (C.) bicinctus	T		5
01900	Nemertea	F	1		80440	Cricotopus (C.) trifascia	F		9
03000	Ectoprocta	F	1		81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		5 +
03600	Oligochaeta	T		+	82130	Thienemanniella similis	MI		+
04901	Erpobdellidae	MT		+	82220	Tvetenia discoloripes group	MI		32
05800	Caecidotea sp	T		+	83040	Dicrotendipes neomodestus	F		+
05900	Lirceus sp	MT	1		84450	Polypedilum (Uresipedilum) flavum	F		324 +
06201	Hyalella azteca	F		+	85625	Rheotanytarsus sp	F		72
11118	Plauditus dubius	MI	15		85800	Tanytarsus sp	F		+
11130	Baetis intercalaris	F	828	+	87540	Hemerodromia sp	F		1
12200	Isonychia sp	MI	11		93200	Hydrobiidae	F		+
13000	Leucrocuta sp	MI		+	93900	Elimia sp	MI		2 +
13100	Nixe sp	MI		+	95100	Physella sp	T		+
13400	Stenacron sp	F	11	+	96900	Ferrissia sp	F		1 +
13510	Maccaffertium exiguum	MI	32		97601	Corbicula fluminea	F		1 +
13521	Stenonema femoratum	F		+					
13561	Maccaffertium pulchellum	MI	1	+					
13570	Maccaffertium terminatum	MI	40	+					
16700	Tricorythodes sp	MI	349	+					
17200	Caenis sp	F		+					
21200	Calopteryx sp	F		+					
21300	Hetaerina sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F	2	+					
34715	Agneta flavescens	I	1						
43300	Ranatra sp	F		+					
52200	Cheumatopsyche sp	F	1039	+					
52430	Ceratopsyche morosa group	MI	1890	+					
52570	Hydropsyche simulans	MI	38						
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F	1	+					
59415	Nectopsyche exquisita	MI		+					
59970	Petrophila sp	MI		+					
68075	Psephenus herricki	MI		+					
68601	Ancyronyx variegata	F	1						
68901	Macronychus glabratus	F	32						
69400	Stenelmis sp	F	22	+					
74100	Simulium sp	F	1						
77800	Helopelopia sp	F	9	+					
78450	Nilotanypus fimbriatus	F	5						
78750	Rheopelopia paramaculipennis	MI	5						
80310	Cardiocladius obscurus	MI	9						

No. Quantitative Taxa: 36 Total Taxa; 59
 No. Qualitative Taxa: 40 ICI: 46
 Number of Organisms: 4902 Qual EPT: 14
 Aquatic Life Use: CWH Taxa: 0

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/23/2020		RM: 1.70			
Site ID: OLN03		Location: ust. 3rd. Ave.		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	84450	Polypedium (Uresipedilum) flavum	F		+
01801	Turbellaria	F		+	84470	Polypedium (P.) illinoense	T		+
03360	Plumatella sp	F		+	84540	Polypedium (Tripodura) scalaenum group	F		+
03600	Oligochaeta	T		+	84888	Xenochironomus xenolabis	F		+
04666	Helobdella papillata	MT		+	86900	Myxosargus sp	MT		+
05800	Caecidotea sp	T		+	93200	Hydrobiidae	F		+
06201	Hyalella azteca	F		+	96900	Ferrissia sp	F		+
06700	Crangonyx sp	MT		+	96930	Laevapex fuscus	MT		+
08601	Hydrachnidia	F		+	97601	Corbicula fluminea	F		+
11118	Plauditus dubius	MI		+					
11130	Baetis intercalaris	F		+					
12200	Isonychia sp	MI		+	No. Quantitative Taxa:	0	Total Taxa;	52	
13000	Leucrocuta sp	MI		+	No. Qualitative Taxa:		52	ICI:	E
13400	Stenacron sp	F		+	Number of Organisms:	0	Qual EPT:	21	
13510	Maccaffertium exiguum	MI		+	Aquatic Life Use:		CWH Taxa:	0	
13521	Stenonema femoratum	F		+					
13570	Maccaffertium terminatum	MI		+					
16700	Tricorythodes sp	MI		+					
17200	Caenis sp	F		+					
18100	Anthopotamus sp	MI		+					
18600	Ephemera sp	MI		+					
21200	Calopteryx sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		+					
34715	Agnatina flavescens	I		+					
45400	Trichocorixa sp	MT		+					
52200	Cheumatopsyche sp	F		+					
52430	Ceratopsyche morosa group	MI		+					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		+					
58505	Helicopsyche borealis	MI		+					
59100	Ceraclea sp	MI		+					
59415	Nectopsyche exquisita	MI		+					
59700	Triaenodes sp	MI		+					
59970	Petrophila sp	MI		+					
60900	Peltodytes sp	MT		+					
68075	Psephenus herricki	MI		+					
69400	Stenelmis sp	F		+					
74100	Simulium sp	F		+					
77120	Ablabesmyia mallochi	F		+					
82121	Thienemanniella lobapodema	F		+					
82220	Tvetenia discoloripes group	MI		+					
82820	Cryptochironomus sp	F		+					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/23/2020		RM: 2.00			
Site ID: OLN02		Location: Ust. Former 5th Ave. Dam (formerly impounded) - King Ave.				Sample:			
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		35 +
01801	Turbellaria	F		328 +	81250	Nanocladius (N.) minimus	F		9
01900	Nemertea	F		32	82130	Thienemanniella similis	MI		24
03360	Plumatella sp	F		+	82220	Tvetenia discoloripes group	MI		35
03600	Oligochaeta	T		+	84450	Polypedilum (Uresipedilum) flavum	F		459 +
05800	Caecidotea sp	T		+	84470	Polypedilum (P.) illinoense	T		+
06201	Hyalella azteca	F		+	84490	Polypedilum (Cerobregma) ontario	MI		9
08601	Hydrachnidia	F		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
11118	Plauditus dubius	MI		23 +	85625	Rheotanytarsus sp	F		274
11120	Baetis flavistriga	F		1	85840	Tanytarsus sepp	F		9
11130	Baetis intercalaris	F		803 +	87540	Hemerodromia sp	F		9
11150	Labiobaetis propinquus	MI		+	93900	Elimia sp	MI		6 +
12200	Isonychia sp	MI		33 +	95100	Physella sp	T		+
13000	Leucrocota sp	MI		5	96900	Ferrissia sp	F		+
13100	Nixe sp	MI		+	96930	Laevapex fuscus	MT		+
13400	Stenacron sp	F		60 +	97601	Corbicula fluminea	F		1 +
13510	Maccaffertium exiguum	MI		117	<hr/> No. Quantitative Taxa: 32 Total Taxa; 59 No. Qualitative Taxa: 47 ICI: 50 Number of Organisms: 5199 Qual EPT: 19 Aquatic Life Use: CWH Taxa: 0				
13561	Maccaffertium pulchellum	MI		136 +					
13570	Maccaffertium terminatum	MI		67 +					
16700	Tricorythodes sp	MI		701 +					
17200	Caenis sp	F		+					
18600	Ephemera sp	MI		+					
21200	Calopteryx sp	F		+					
22001	Coenagrionidae	T		+					
22300	Argia sp	F		2 +					
25010	Hagenius brevistylus	F		+					
34715	Agnatina flavescens	I		1 +					
43300	Ranatra sp	F		+					
44501	Corixidae	F		+					
50315	Chimarra obscura	MI		2 +					
52200	Cheumatopsyche sp	F		1277 +					
52430	Ceratopsyche morosa group	MI		637 +					
52570	Hydropsyche simulans	MI		40					
53400	Protoptila sp	I		+					
53501	Hydroptilidae	F		+					
58505	Helicopsyche borealis	MI		+					
59407	Nectopsyche candida	MI		+					
59970	Petrophila sp	MI		2 +					
65800	Berosus sp	MT		+					
68075	Psephenus herricki	MI		+					
69400	Stenelmis sp	F		44 +					
77800	Helopelopia sp	F		18 +					
80410	Cricotopus (C.) sp	F		+					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/24/2020		RM: 3.90		
Site ID: OLN01		Location: Dst. Dodridge lowhead dam (Ust Dodridge St)				Sample:		
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.	
01801	Turbellaria	F		311 +	80350	Corynoneura sp		4
03600	Oligochaeta	T		16 +	80410	Cricotopus (C.) sp	F	43
05800	Caecidotea sp	T		+	80420	Cricotopus (C.) bicinctus	T	9
06201	Hyalella azteca	F		+	80440	Cricotopus (C.) trifascia	F	43
08601	Hydrachnidia	F		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F	9
11118	Plauditus dubius	MI		84	82101	Thienemanniella taurocapita	MI	4
11130	Baetis intercalaris	F		858 +	82130	Thienemanniella similis	MI	112 +
11650	Proclleon sp (w/ hindwing pads)	MI		+	82220	Tvetenia discoloripes group	MI	43
11670	Proclleon viridoculare	MI		+	82710	Chironomus (C.) sp	MT	+
12200	Isonychia sp	MI		14	84450	Polypedilum (Uresipedilum) flavum	F	476
13000	Leucrocota sp	MI		+	84470	Polypedilum (P.) illinoense	T	+
13400	Stenacron sp	F		+	85625	Rheotanytarsus sp	F	128
13510	Maccaffertium exiguum	MI		4	85720	Stempellinella fimbriata	MI	+
13561	Maccaffertium pulchellum	MI		310 +	85840	Tanytarsus sepp	F	+
13570	Maccaffertium terminatum	MI		51 +	87540	Hemerodromia sp	F	48
16700	Tricorythodes sp	MI		203 +	93900	Elimia sp	MI	1 +
18619	Ephemera simulans	MI		+	97601	Corbicula fluminea	F	1 +
21300	Hetaerina sp	F		1 +				
22001	Coenagrionidae	T		+				
22300	Argia sp	F		+	No. Quantitative Taxa:	35	Total Taxa;	59
26700	Macromia sp	MI		+	No. Qualitative Taxa:		ICI:	48
27307	Epitheca (Epicordulia) princeps	MT		+	Number of Organisms:	8343	Qual EPT:	16
34715	Agnatina flavescens	I		+	Aquatic Life Use:		CWH Taxa:	0
50315	Chimarra obscura	MI		13 +				
52200	Cheumatopsyche sp	F		3266 +				
52430	Ceratopsyche morosa group	MI		2060 +				
52530	Hydropsyche depravata group	F		39				
52570	Hydropsyche simulans	MI		1				
52590	Hydropsyche venularis	MI		43				
53400	Protoptila sp	I		+				
53800	Hydroptila sp	F		16				
54160	Ochrotrichia sp	MI		8				
58505	Helicopsyche borealis	MI		+				
59415	Nectopsyche exquisita	MI		+				
59970	Petrophila sp	MI		+				
68075	Psephenus herricki	MI		3 +				
68601	Ancyronyx variegata	F		+				
69400	Stenelmis sp	F		52 +				
71900	Tipula sp	F		+				
77750	Hayesomyia senata or Thienemannimyia norena	F		9				
78655	Procladius (Holotanypus) sp	MT		+				
80310	Cardiocladius obscurus	MI		60				

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 10/01/2020		RM: 4.50	
Site ID: OLN12		Location: <i>Ust. Dodridge Dam in impoundment adj. OSU Wetland Res.</i>				Sample:	
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
01320	Hydra sp	F	42				
01801	Turbellaria	F	1	No. Quantitative Taxa: 28 Total Taxa; 40			
03600	Oligochaeta	T	222 +	No. Qualitative Taxa: 20 ICI: 18			
04510	Hirudinida	MT	+	Number of Organisms: 2790 Qual EPT: 2			
05800	Caecidotea sp	T	+	Aquatic Life Use: CWH Taxa: 0			
06201	Hyalella azteca	F	1 +				
06700	Crangonyx sp	MT	+				
11250	Neocloeon sp. (Centropilum sp, w/o hindwing pads)	MI	+				
13400	Stenacron sp	F	58 +				
13521	Stenonema femoratum	F	1				
16700	Tricorythodes sp	MI	3				
17200	Caenis sp	F	12				
22001	Coenagrionidae	T	3 +				
22300	Argia sp	F	29 +				
24107	Nasiaeschna pentacantha	MT	+				
24600	Arigomphus sp	MT	+				
44501	Corixidae	F	+				
51206	Cynellus fraternus	F	21				
52200	Cheumatopsyche sp	F	1				
60900	Peltodytes sp	MT	+				
65800	Berosus sp	MT	1				
69000	Microcylloepus pusillus	MI	1				
77130	Ablabesmyia rhamphe group	MT	22				
78655	Procladius (Holotanypus) sp	MT	+				
80360	Corynoneura floridaensis	MI	16				
80370	Corynoneura lobata	F	16				
82730	Chironomus (C.) decorus group	T	+				
83040	Dicrotendipes neomodestus	F	508				
83050	Dicrotendipes lucifer	MT	1038				
83051	Dicrotendipes simpsoni	T	155				
83300	Glyptotendipes (G.) sp	MT	110				
84790	Tribelos fuscicorne	F	398 +				
85720	Stempellinella fimbriata	MI	16				
85800	Tanytarsus sp	F	44 +				
85821	Tanytarsus glabrescens group sp 7	F	66				
87540	Hemerodromia sp	F	2				
89001	Sciomyzidae	MT	1				
93900	Elimia sp	MI	2 +				
96930	Laevapex fuscus	MT	+				
97601	Corbicula fluminea	F	+				

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 10/01/2020		RM: 5.50			
Site ID: OLN11		Location: at Northmoor Park		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	84540	Polypedilum (Tripodura)	F		11
01320	Hydra sp	F		61		scalaenum group			
01801	Turbellaria	F		19	84700	Stenochironomus sp	F		+
01900	Nemertea	F		4	84790	Tribelos fuscicorne	F		254
03451	Urnatella gracilis	MI		1	84800	Tribelos jucundum	MT		+
03600	Oligochaeta	T		78	85625	Rheotanytarsus sp	F		6
04664	Helobdella stagnalis	T		+	85720	Stempellinella fimbriata	MI		12
04964	Erpobdella microstoma	MT		+	85800	Tanytarsus sp	F		11
05800	Caecidotea sp	T		6	85821	Tanytarsus glabrescens group sp 7	F		11
05900	Lirceus sp	MT		1	85840	Tanytarsus sepp	F		11
06201	Hyalella azteca	F		+	87540	Hemerodromia sp	F		2
06700	Crangonyx sp	MT		+	92516	Campeloma decium	F		+
08601	Hydrachnidia	F		+	93200	Hydrobiidae	F		+
11130	Baetis intercalaris	F		1	93900	Elimia sp	MI		14
13400	Stenacron sp	F		105	95100	Physella sp	T		8
13521	Stenonema femoratum	F		6	96900	Ferrissia sp	F		4
16700	Tricorythodes sp	MI		1	96930	Laevapex fuscus	MT		+
17200	Caenis sp	F		3	97601	Corbicula fluminea	F		+
22001	Coenagrionidae	T		1	97710	Dreissena polymorpha	F		+
22300	Argia sp	F		27					
28500	Libellula sp	MT		+	No. Quantitative Taxa: 38		Total Taxa; 58		
44501	Corixidae	F		+	No. Qualitative Taxa: 31		ICI: 24		
51206	Cyrnellus fraternus	F		1	Number of Organisms: 766		Qual EPT: 2		
52200	Cheumatopsyche sp	F		1	Aquatic Life Use:		CWH Taxa: 0		
59415	Nectopsyche exquisita	MI		+					
65800	Berosus sp	MT		2					
68700	Dubiraphia sp	F		2					
68901	Macronychus glabratus	F		+					
78140	Labrundinia pilosella	F		4					
78655	Procladius (Holotanypus) sp	MT		+					
80360	Corynoneura floridaensis	MI		2					
80370	Corynoneura lobata	F		6					
81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		6					
83040	Dicrotendipes neomodestus	F		39					
83051	Dicrotendipes simpsoni	T		6					
83055	Dicrotendipes tritonus			11					
83300	Glyptotendipes (G.) sp	MT		17					
84210	Paratendipes albimanus or P. duplicatus	F		11					
84470	Polypedilum (P.) illinoense	T		+					
84520	Polypedilum (Tripodura) halterale group	MT		+					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/24/2020		RM: 7.00			
Site ID: OLN10		Location: Ust. Henderson Rd. - dst. Beechwood Run				Sample:			
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
00401	Spongillidae	F		+	68075	Psephenus herricki	MI		3 +
01320	Hydra sp	F		2	68601	Ancyronyx variegata	F		1 +
01801	Turbellaria	F		73 +	68707	Dubiraphia quadrinotata	F		+
01900	Nemertea	F		10	68901	Macronychus glabratus	F		1
03000	Ectoprocta	F		+	69400	Stenelmis sp	F		46 +
03600	Oligochaeta	T		6 +	77750	Hayesomyia senata or Thienemannimyia norena	F		6
04662	Helobdella fusca	T		+	77800	Helopelopia sp	F		12 +
04964	Erpobdella microstoma	MT		1 +	78450	Nilotanypus fimbriatus	F		8
05800	Caecidotea sp	T		+	78750	Rheopelopia paramaculipennis	MI		2
05900	Lirceus sp	MT		1 +	80360	Corynoneura floridaensis	MI		6
06201	Hyalella azteca	F		+	80370	Corynoneura lobata	F		7
08250	Orconectes (Procericambarus) rusticus	F		+	81650	Parametriocnemus sp	X F		2
08601	Hydrachnidia	F		+	82101	Thienemanniella taurocapita	MI		10
11118	Plauditus dubius	MI		1 +	82130	Thienemanniella similis	MI		20
11120	Baetis flavistriga	F		3 +	82141	Thienemanniella xena	F		1
11130	Baetis intercalaris	F		134 +	82220	Tvetenia discoloripes group	MI		2
12200	Isonychia sp	MI		2 +	82820	Cryptochironomus sp	F		+
13000	Leucrocota sp	MI		20 +	82822	Cryptochironomus eminentia	F		+
13100	Nixe sp	MI		+	84020	Parachironomus carinatus	F		2
13400	Stenacron sp	F		+	84210	Paratendipes albimanus or P. duplicatus	F		+
13561	Maccaffertium pulchellum	MI		243 +	84450	Polypedilum (Uresipedilum) flavum	F		116 +
13570	Maccaffertium terminatum	MI		+	84460	Polypedilum (P.) fallax group	F		6
16324	Teloganopsis deficiens	I		1	84470	Polypedilum (P.) illinoense	T		2
16700	Tricorythodes sp	MI		99 +	84490	Polypedilum (Cerobregma) ontario	MI		2
18100	Anthopotamus sp	MI		2	84540	Polypedilum (Tripodura) scalaenum group	F		2 +
18600	Ephemera sp	MI		+	84800	Tribelos jucundum	MT		2
21300	Hetaerina sp	F		+	85625	Rheotanytarsus sp	F		17
22001	Coenagrionidae	T		+	85821	Tanytarsus glabrescens group sp 7	F		12 +
22300	Argia sp	F		2 +	87540	Hemerodromia sp	F		14
27001	Corduliidae			+	93900	Elimia sp	MI		143 +
34715	Agnetina flavescens	I		38 +	95100	Physella sp	T		+
50301	Chimarra aterrima	MI		+	96900	Ferrissia sp	F		23 +
50315	Chimarra obscura	MI		1 +	96930	Laevapex fuscus	MT		1 +
52200	Cheumatopsyche sp	F		265 +	97601	Corbicula fluminea	F		3 +
52430	Ceratopsyche morosa group	MI		70 +	97710	Dreissena polymorpha	F		+
53400	Protoptila sp	I		13 +	98600	Sphaerium sp	F		+
58505	Helicopsyche borealis	MI		3 +					
59110	Ceraclea ancylus	MI		+					
59415	Nectopsyche exquisita	MI		+					
59720	Trienodes ignitus	MI		+					
59724	Trienodes injustus	MI		+					
59970	Petrophila sp	MI		1 +					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400	River: <i>Olentangy River</i>	Coll. Date: <i>09/24/2020</i>	RM: 7.00
Site ID: OLN10	Location: <i>Ust. Henderson Rd. - dst. Beechwold Run</i>	Sample:	

Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
No. Quantitative Taxa:	52	Total Taxa:	78
No. Qualitative Taxa:	56	ICI:	48
Number of Organisms:	1463	Qual EPT:	22
Aquatic Life Use:		CWH Taxa:	1

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/24/2020		RM: 8.50			
Site ID: OLN09		Location: <i>dst. Antrim Park</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01320	Hydra sp	F		24	69400	Stenelmis sp	F		15 +
01801	Turbellaria	F		124 +	74100	Simulium sp	F		9
01900	Nemertea	F		1	77750	Hayesomyia senata or Thienemannimyia norena	F		6
03600	Oligochaeta	T		1 +	77800	Helopelopia sp	F		42 +
04601	Glossiphoniidae	MT		+	78350	Meropelopia sp	X F		6
04964	Erpobdella microstoma	MT		+	78450	Nilotanypus fimbriatus	F		32
05800	Caecidotea sp	T		+	80360	Corynoneura floridaensis	MI		16
05900	Lirceus sp	MT		+	80413	Cricotopus (Isocladius) sp "Ozarks"	MT		12
06201	Hyalella azteca	F		+	80430	Cricotopus (C.) tremulus group	MT		6
07840	Cambarus (Cambarus) sciotensis	MI		+	81650	Parametrioctenemus sp	X F		6
11020	Acerpenna pygmaea	MI		2	81825	Rheocricotopus (Psilocricotopus) robacki	F		6
11118	Plauditus dubius	MI		53 +	82130	Thienemanniella similis	MI		4
11120	Baetis flavistriga	F		26 +	82220	Tvetenia discoloripes group	MI		6
11130	Baetis intercalaris	F		1053 +	84155	Paralauterborniella nigrohalteralis	F		+
11200	Callibaetis sp	MT		+	84450	Polypedilum (Uresipedilum) flavum	F		365 +
12200	Isonychia sp	MI		19	84470	Polypedilum (P.) illinoense	T		+
13000	Leucrocota sp	MI		+	84540	Polypedilum (Tripodura) scalaenum group	F		+
13400	Stenacron sp	F		2 +	85625	Rheotanytarsus sp	F		185
13521	Stenonema femoratum	F		+	85720	Stempellinella fimbriata	MI		8 +
13561	Maccaffertium pulchellum	MI		425 +	85821	Tanytarsus glabrescens group sp 7	F		30
13570	Maccaffertium terminatum	MI		56 +	85840	Tanytarsus sepp	F		6
16324	Teloganopsis deficiens	I		16	87540	Hemerodromia sp	F		41
16700	Tricorythodes sp	MI		74 +	93900	Elimia sp	MI		1 +
17200	Caenis sp	F		+	95100	Physella sp	T		+
18619	Ephemera simulans	MI		+	96900	Ferrissia sp	F		1 +
21200	Calopteryx sp	F		1	96930	Laevapex fuscus	MT		+
22001	Coenagrionidae	T		+					
22300	Argia sp	F		1 +					
34715	Agnatina flavescens	I		34 +					
43300	Ranatra sp	F		+					
50301	Chimarra aterrima	MI		9 +	No. Quantitative Taxa:	45	Total Taxa;	69	
50315	Chimarra obscura	MI		47 +	No. Qualitative Taxa:		ICI:	56	
52200	Cheumatopsyche sp	F		788 +	Number of Organisms:	3979	Qual EPT:	21	
52430	Ceratopsyche morosa group	MI		415 +	Aquatic Life Use:		CWH Taxa:	2	
52530	Hydropsyche depravata group	F		3 +					
52570	Hydropsyche simulans	MI		1					
53400	Protoptila sp	I		+					
59415	Nectopsyche exquisita	MI		+					
59724	Trienodes injustus	MI		+					
59970	Petrophila sp	MI		+					
65800	Berosus sp	MT		+					
68075	Psephenus herricki	MI		+					
68601	Ancyronyx variegata	F		1					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/21/2020		RM: 11.90			
Site ID: OLN08		Location: Olentangy R. @Worthington Ust. I-270 N.		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01320	Hydra sp	F		8	59970	Petrophila sp	MI		+
01801	Turbellaria	F		170	60900	Peltodytes sp	MT		+
01900	Nemertea	F		24	68025	Ectopria sp	F		1
03600	Oligochaeta	T		16 +	68075	Psephenus herricki	MI		5 +
05900	Lirceus sp	MT		+	68601	Ancyronyx variegata	F		1
06201	Hyalella azteca	F		+	68708	Dubiraphia vittata group	F		+
07840	Cambarus (Cambarus) sciotensis	MI		+	68901	Macronychus glabratus	F		+
11118	Plauditus dubius	MI		4 +	69400	Stenelmis sp	F		34 +
11120	Baetis flavistriga	F		66 +	71900	Tipula sp	F		+
11130	Baetis intercalaris	F		152 +	77120	Ablabesmyia mallochii	F		+
11200	Callibaetis sp	MT		+	77500	Conchapelopia sp	F		7
11670	Proclleon viridoculare	MI		+	77750	Hayesomyia senata or Thienemannimyia norena	F		7
12200	Isonychia sp	MI		3	77800	Helopelopia sp	F		22 +
13000	Leucrocota sp	MI		+	78450	Nilotanypus fimbriatus	F		4
13100	Nixe sp	MI		+	78680	Procladius (Psilotanypus) bellus	MT		+
13400	Stenacron sp	F		+	80360	Corynoneura floridaensis	MI		16
13561	Maccaffertium pulchellum	MI		470 +	80363	Corynoneura sp 12	MI		2
13570	Maccaffertium terminatum	MI		+	80370	Corynoneura lobata	F		2
16324	Teloganopsis deficiens	I		88	80470	Cricotopus (C.) or Orthocladus (O.) sp			4
16700	Tricorythodes sp	MI		19 +	81060	Lopescladius sp	MI		+
17200	Caenis sp	F		8 +	81650	Parametricnemus sp	X F		4
18100	Anthopotamus sp	MI		16 +	81825	Rheocricotopus (Psilocricotopus) robacki	F		4
18619	Ephemera simulans	MI		+	82220	Tvetenia discoloripes group	MI		4
21200	Calopteryx sp	F		+	82820	Cryptochironomus sp	F		+
22001	Coenagrionidae	T		+	83300	Glyptotendipes (G.) sp	MT		4
22300	Argia sp	F		4 +	84118	Paracladopelma undine	MI		+
26700	Macromia sp	MI		+	84300	Phaenopsectra obediens group	F		4
34300	Neoperla clymene complex	I		+	84450	Polypedilum (Uresipedilum) flavum	F		274 +
34715	Agnetina flavescens	I		34 +	84470	Polypedilum (P.) illinoense	T		4
44501	Corixidae	F		+	84520	Polypedilum (Tripodura) halterale group	MT		+
50315	Chimarra obscura	MI		10 +	84540	Polypedilum (Tripodura) scalaenum group	F		4
52200	Cheumatopsyche sp	F		883 +	85625	Rheotanytarsus sp	F		4
52430	Ceratopsyche morosa group	MI		374 +	85720	Stempellinella fimbriata	MI		+
52530	Hydropsyche depravata group	F		+	85800	Tanytarsus sp	F		+
52590	Hydropsyche venularis	MI		5 +	85821	Tanytarsus glabrescens group sp 7	F		11
53400	Protoptila sp	I		742 +	85840	Tanytarsus sepp	F		11
53501	Hydroptilidae	F		1 +	87540	Hemerodromia sp	F		16
57400	Neophylax sp	MI		+	93900	Elimia sp	MI		40 +
58505	Helicopsyche borealis	MI		18 +	96120	Menetus (Micromenetus) dilatatus	MT		1
59415	Nectopsyche exquisita	MI		+					
59720	Trienodes ignitus	MI		+					
59724	Trienodes injustus	MI		+					
59740	Trienodes perna	MI		+					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

Taxa Code		Taxa		CWH Taxa Tol.		Qt./Ql.		Taxa Code		Taxa		CWH Taxa Tol.		Qt./Ql.	
96900	Ferrissia sp			F		2	+								
96930	Laevapex fuscus			MT		1									
97601	Corbicula fluminea			F		2	+								
99280	Lasmigona costata			MI			+								
99880	Lampsilis cardium			MI			+								
No. Quantitative Taxa:		51	Total Taxa;		87										
No. Qualitative Taxa:		60	ICI:		54										
Number of Organisms:		3610	Qual EPT:		29										
Aquatic Life Use:			CWH Taxa:		1										

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/21/2020		RM: 13.30			
Site ID: OLN07		Location: Dst. Olentangy ECC		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01320	Hydra sp	F		13	68075	Psephenus herricki	MI		1 +
01801	Turbellaria	F		28 +	68601	Ancyronyx variegata	F		8
01900	Nemertea	F		1	68901	Macronychus glabratus	F		2
03360	Plumatella sp	F		1	69400	Stenelmis sp	F		22 +
03600	Oligochaeta	T		1 +	77120	Ablabesmyia mallochi	F		+
04666	Helobdella papillata	MT		+	77750	Hayesomyia senata or Thienemannimyia norena	F		3
05900	Lirceus sp	MT		1 +	77800	Helopelopia sp	F		5
06201	Hyalella azteca	F		+	78140	Labrundinia pilosella	F		1
08601	Hydrachnidia	F		+	78450	Nilotanypus fimbriatus	F		3
11130	Baetis intercalaris	F		170 +	78750	Rheopelopia paramaculipennis	MI		+
11200	Callibaetis sp	MT		+	80370	Corynoneura lobata	F		3
13000	Leucrocota sp	MI		5 +	81060	Lopescladius sp	MI		+
13100	Nixe sp	MI		+	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F		2
13400	Stenacron sp	F		169 +	81650	Parametrioctenus sp	X F		1
13521	Stenonema femoratum	F		2 +	81825	Rheocricotopus (Psilocricotopus) robacki	F		2
13561	Maccaffertium pulchellum	MI		256 +	82101	Thienemanniella taurocapita	MI		1
13570	Maccaffertium terminatum	MI		+	82130	Thienemanniella similis	MI		5
16324	Teloganopsis deficiens	I		12	82141	Thienemanniella xena	F		1
16700	Tricorythodes sp	MI		+	82220	Tvetenia discoloripes group	MI		2
17200	Caenis sp	F		+	84300	Phaenopsectra obediens group	F		+
18100	Anthopotamus sp	MI		+	84450	Polypedilum (Uresipedilum) flavum	F		22 +
18619	Ephemera simulans	MI		+	84470	Polypedilum (P.) illinoense	T		1 +
21200	Calopteryx sp	F		2	84540	Polypedilum (Tripodura) scalaenum group	F		+
21300	Hetaerina sp	F		+	84700	Stenochironomus sp	F		2
22001	Coenagrionidae	T		+	85625	Rheotanytarsus sp	F		11
22300	Argia sp	F		6 +	85720	Stempellinella fimbriata	MI		3
26700	Macromia sp	MI		+	85800	Tanytarsus sp	F		1
34300	Neoperla clymene complex	I		+	85821	Tanytarsus glabrescens group sp 7	F		3
34715	Agnatina flavescens	I		7 +	85840	Tanytarsus sepp	F		2
45000	Hesperocorixa sp	T		+	87540	Hemerodromia sp	F		1
45400	Trichocorixa sp	MT		+	93900	Elimia sp	MI		78 +
50315	Chimarra obscura	MI		+	95100	Physella sp	T		1 +
52200	Cheumatopsyche sp	F		166 +	96900	Ferrissia sp	F		+
52430	Ceratopsyche morosa group	MI		64 +	96930	Laevapex fuscus	MT		5
52530	Hydropsyche depravata group	F		+	97601	Corbicula fluminea	F		+
52590	Hydropsyche venularis	MI		+	99560	Ptychobranthus fasciolaris	MI		+
53400	Protophila sp	I		263 +	99860	Lampsilis radiata luteola	MI		+
53800	Hydroptila sp	F		1 +					
57400	Neophylax sp	MI		+					
58505	Helicopsyche borealis	MI		26 +					
59415	Nectopsyche exquisita	MI		+					
59724	Trienodes injustus	MI		+					
59970	Petrophila sp	MI		+					

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400	River: <i>Olentangy River</i>	Coll. Date: <i>09/21/2020</i>	RM: 13.30
Site ID: OLN07	Location: <i>Dst. Olentangy ECC</i>	Sample:	
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.

No. Quantitative Taxa: 48 Total Taxa: 80
 No. Qualitative Taxa: 53 ICI: 54
 Number of Organisms: 1386 Qual EPT: 25
 Aquatic Life Use: CWH Taxa: 1

Table C-9. Macroinvertebrate taxa for sites in the Olentangy River mainstem collected by MBI in 2020.

River Code: 02-400		River: Olentangy River		Coll. Date: 09/21/2020		RM: 14.90	
Site ID: OLN05		Location: <i>dst. Powell Rd. in Highbanks Metropark</i>				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
01320	Hydra sp	F		24	60900	Peltodytes sp	MT +
01801	Turbellaria	F		40 +	64050	Liodessus sp	MT +
01900	Nemertea	F		2 +	65800	Berosus sp	MT 1
03600	Oligochaeta	T		12 +	68075	Psephenus herricki	MI 1 +
04964	Erpobdella microstoma	MT		+	68130	Helichus sp	F +
05900	Lirceus sp	MT		+	68201	Scirtidae	F +
06201	Hyalella azteca	F		+	68708	Dubiraphia vittata group	F +
06700	Crangonyx sp	MT		+	69400	Stenelmis sp	F 20 +
11118	Plauditus dubius	MI		4 +	77750	Hayesomyia senata or Thienemannimyia norena	F 12
11120	Baetis flavistriga	F		+	77800	Helopelopia sp	F 17
11130	Baetis intercalaris	F		26 +	78450	Nilotanypus fimbriatus	F 2
11670	Proclleon viridoculare	MI		+	79085	Telopelopia okoboji	MI 2
12200	Isonychia sp	MI		+	80370	Corynoneura lobata	F 4
13000	Leucrocota sp	MI		3 +	81231	Nanocladius (N.) crassicornus or N. (N.) "rectinervis"	F 5
13100	Nixe sp	MI		+	82101	Thienemanniella taurocapita	MI 4
13400	Stenacron sp	F		3 +	82130	Thienemanniella similis	MI 4
13521	Stenonema femoratum	F		+	83040	Dicrotendipes neomodestus	F 5
13561	Maccaffertium pulchellum	MI		266 +	84210	Paratendipes albimanus or P. duplicatus	F +
13570	Maccaffertium terminatum	MI		+	84315	Phaenopsectra flavipes	MT 2
16324	Teloganopsis deficiens	I		40	84450	Polypedilum (Uresipedilum) flavum	F 48 +
16700	Tricorythodes sp	MI		23 +	84460	Polypedilum (P.) fallax group	F 2
18100	Anthopotamus sp	MI		+	84470	Polypedilum (P.) illinoense	T 2 +
18619	Ephemera simulans	MI		+	84540	Polypedilum (Tripodura) scalaenum group	F 10 +
21300	Hetaerina sp	F		+	84700	Stenochironomus sp	F 10
22001	Coenagrionidae	T		+	85625	Rheotanytarsus sp	F 29
22300	Argia sp	F		4 +	85720	Stempellinella fimbriata	MI 5
27307	Epitheca (Epicordulia) princeps	MT		+	85821	Tanytarsus glabrescens group sp 7	F 31
34300	Neoperla clymene complex	I		+	85840	Tanytarsus sepp	F 5 +
34715	Agnatina flavescens	I		36 +	87540	Hemerodromia sp	F 1
50315	Chimarra obscura	MI		+	93900	Elimia sp	MI 8 +
52200	Cheumatopsyche sp	F		299 +	95100	Physella sp	T +
52430	Ceratopsyche morosa group	MI		167 +	97601	Corbicula fluminea	F +
52590	Hydropsyche venularis	MI		10 +			
53400	Protoptila sp	I		16 +			
53501	Hydroptilidae	F		+			
57400	Neophylax sp	MI		+			
58505	Helicopsyche borealis	MI		+			
59110	Ceraclea ancyclus	MI		+			
59415	Nectopsyche exquisita	MI		1 +			
59510	Oecetis avara	I		1			
59720	Trienodes ignitus	MI		+			
59740	Trienodes perna	MI		+			
59970	Petrophila sp	MI		1 +			

No. Quantitative Taxa: 44 Total Taxa; 75
 No. Qualitative Taxa: 55 ICI: 54
 Number of Organisms: 1208 Qual EPT: 28
 Aquatic Life Use: **EWH** CWH Taxa: 0

APPENDIX C: Olentangy Tributaries Macroinvertebrate Assemblage
C-10: Olentangy Tributaries ICI Narrative Assessment
C-11: Adena Brook Macroinvertebrate Taxa Grand (all sites combined)
C-12: Rush Run Macroinvertebrate Taxa Grand (all sites combined)
C-13: Olentangy Tributaries Macroinvertebrate Taxa by Site

Appendix Table C-10. ICI metrics and values in the Olentangy River tributaries during 2020.

Site_ID	River Mile	Drainage Area (sq mi)	Number of				Percent:					Qual. EPT	ICI or Narrative
			Total Taxa	Mayfly Taxa	Caddisfly Taxa	Dipteran Taxa	Mayflies	Caddisflies	Tany-tarsini	Other Dipt/NI	Tolerant Organisms		
Adena Brook (02-401)													
Year: 2020													
ADN04	1.60	1.8										6	F
ADN03	1.10	2.3										5	F
ADN02	0.70	2.7										7	F
ADN01	0.20	2.3										5	F
Rush Run (02-403)													
Year: 2020													
RSH04	3.00	0.7										1	P
RSH03	2.00	1.7										1	P
RSH02	1.10	2.3										4	P
RSH01	0.20	1.9										7	F
Beechwold Run (Unnamed Trib to Olentangy R @ RM 7. (02-483)													
Year: 2020													
BCH01	0.30	0.1										1	VP

Narrative Codes, VP - Very Poor, P - Poor, F - Fair, MG - Marginally Good, G - Good, E - Excellent, PHW3A - Spring Water Type A, PHW2 - Small Drainage Warm Water Stream

Appendix Table C-1 . Macroinvertebrate taxa collected by qualitative sampling at all sites in Adena Brook, 2020.

Taxa Code	Taxa Name	Tolerance	QUAL Samples	Frequency of Collection	Total Samples
01801	<i>Turbellaria</i>	F	4	4	4
03600	<i>Oligochaeta</i>	T	4	4	4
04664	<i>Helobdella stagnalis</i>	T	1	1	4
04666	<i>Helobdella papillata</i>	MT	1	1	4
04901	<i>Erpobdellidae</i>	MT	2	2	4
04935	<i>Erpobdella punctata punctata</i>	MT	3	3	4
05800	<i>Caecidotea sp</i>	T	1	1	4
05900	<i>Lirceus sp</i>	MT	1	1	4
06700	<i>Crangonyx sp</i>	MT	3	3	4
07800	<i>Cambarus sp</i>		4	4	4
11120	<i>Baetis flavistriga</i>	F	4	4	4
11130	<i>Baetis intercalaris</i>	F	4	4	4
13521	<i>Stenonema femoratum</i>	F	1	1	4
21200	<i>Calopteryx sp</i>	F	4	4	4
22300	<i>Argia sp</i>	F	4	4	4
23700	<i>Anax sp</i>	MT	1	1	4
28705	<i>Pachydiplax longipennis</i>	T	1	1	4
50301	<i>Chimarra aterrima</i>	MI	4	4	4
51100	poss. <i>Cernotina sp</i> or <i>Polycentropus sp</i>	MI	4	4	4
52200	<i>Cheumatopsyche sp</i>	F	2	2	4
52530	<i>Hydropsyche depravata group</i>	F	4	4	4
71900	<i>Tipula sp</i>	F	3	3	4
74100	<i>Simulium sp</i>	F	2	2	4
77120	<i>Ablabesmyia mallochii</i>	F	3	3	4
77500	<i>Conchapelopia sp</i>	F	2	2	4
77800	<i>Helopelopia sp</i>	F	2	2	4
78350	<i>Meropelopia sp</i>	F	3	3	4
79720	<i>Diamesa sp</i>	F	2	2	4
81650	<i>Parametriocnemus sp</i>	F	2	2	4
83040	<i>Dicrotendipes neomodestus</i>	F	1	1	4
84000	<i>Parachironomus sp</i>	MT	1	1	4
84210	<i>Paratendipes albimanus</i> or <i>P. duplicatus</i>	F	4	4	4
84300	<i>Phaenopsectra obediens group</i>	F	1	1	4
84450	<i>Polypedilum (Uresipedilum) flavum</i>	F	2	2	4
85500	<i>Paratanytarsus sp</i>	F	1	1	4
85625	<i>Rheotanytarsus sp</i>	F	2	2	4
	36 Total Qualitative Taxa				

Appendix Table C-12 . Macroinvertebrate taxa collected by qualitative sampling at all sites in Rush Run, 2020.

Taxa Code	Taxa Name	Tolerance	QUAL Samples	Frequency of Collection	Total Samples
01801	<i>Turbellaria</i>	F	4	4	4
03600	<i>Oligochaeta</i>	T	4	4	4
04664	<i>Helobdella stagnalis</i>	T	1	1	4
04666	<i>Helobdella papillata</i>	MT	2	2	4
04935	<i>Erpobdella punctata punctata</i>	MT	1	1	4
04964	<i>Erpobdella microstoma</i>	MT	1	1	4
05800	<i>Caecidotea sp</i>	T	2	2	4
06700	<i>Crangonyx sp</i>	MT	2	2	4
07800	<i>Cambarus sp</i>		1	1	4
08601	<i>Hydrachnidia</i>	F	2	2	4
11120	<i>Baetis flavistriga</i>	F	3	3	4
11130	<i>Baetis intercalaris</i>	F	1	1	4
11200	<i>Callibaetis sp</i>	MT	1	1	4
21200	<i>Calopteryx sp</i>	F	1	1	4
21300	<i>Hetaerina sp</i>	F	1	1	4
22001	<i>Coenagrionidae</i>	T	3	3	4
22300	<i>Argia sp</i>	F	1	1	4
23700	<i>Anax sp</i>	MT	1	1	4
28705	<i>Pachydiplax longipennis</i>	T	1	1	4
45900	<i>Notonecta sp</i>	T	1	1	4
50301	<i>Chimarra aterrima</i>	MI	1	1	4
51100	poss. <i>Cernotina sp</i> or <i>Polycentropus sp</i>	MI	2	2	4
52200	<i>Cheumatopsyche sp</i>	F	1	1	4
52530	<i>Hydropsyche depravata group</i>	F	2	2	4
53800	<i>Hydroptila sp</i>	F	2	2	4
60900	<i>Peltodytes sp</i>	MT	1	1	4
71900	<i>Tipula sp</i>	F	1	1	4
74100	<i>Simulium sp</i>	F	3	3	4
74501	<i>Ceratopogonidae</i>	T	1	1	4
77120	<i>Ablabesmyia mallochi</i>	F	1	1	4
77140	<i>Ablabesmyia peleensis</i>		1	1	4
77500	<i>Conchapelopia sp</i>	F	1	1	4
78200	<i>Larsia sp</i>	MT	1	1	4
78350	<i>Meropelopia sp</i>	F	2	2	4
78655	<i>Procladius (Holotanypus) sp</i>	MT	1	1	4
79720	<i>Diamesa sp</i>	F	1	1	4
80411	<i>Cricotopus (Isocladius) sp nr. absurdus</i>	MT	1	1	4
80420	<i>Cricotopus (C.) bicinctus</i>	T	2	2	4
80430	<i>Cricotopus (C.) tremulus group</i>	MT	2	2	4
80510	<i>Cricotopus (Isocladius) sylvestris group</i>	T	1	1	4
80740	<i>Eukiefferiella claripennis group</i>	MT	1	1	4
81650	<i>Parametriocnemus sp</i>	F	1	1	4

Appendix Table C-12 . Macroinvertebrate taxa collected by qualitative sampling at all sites in Rush Run, 2020.

81825	<i>Rheocricotopus (Psilocricotopus) robac</i>	F	1	1	4
82820	<i>Cryptochironomus sp</i>	F	1	1	4
83040	<i>Dicrotendipes neomodestus</i>	F	1	1	4
84210	<i>Paratendipes albimanus</i> or <i>P. duplicat</i>	F	1	1	4
84300	<i>Phaenopsectra obediens</i> group	F	1	1	4
84470	<i>Polypedilum (P.) illinoense</i>	T	4	4	4
84540	<i>Polypedilum (Tripodura) scalaenum</i> gr	F	1	1	4
84960	<i>Pseudochironomus sp</i>	F	1	1	4
95100	<i>Physella sp</i>	T	3	3	4
	52 Total Qualitative Taxa				

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: **02-401** River: **Adena Brook** Coll. Date: *09/14/2020* RM: **0.20**
 Site ID: **ADN01** Location: *Park of Roses - ust. storm sewer locations* Sample:

Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		+					
03600	Oligochaeta	T		+					
04666	Helobdella papillata	MT		+					
04935	Erpobdella punctata punctata	MT		+					
05800	Caecidotea sp	T		+					
05900	Lirceus sp	MT		+					
06700	Crangonyx sp	MT		+					
07800	Cambarus sp			+					
11120	Baetis flavistriga	F		+					
11130	Baetis intercalaris	F		+					
21200	Calopteryx sp	F		+					
22300	Argia sp	F		+					
23700	Anax sp	MT		+					
50301	Chimarra aterrima	MI		+					
51100	poss. Cernotina sp or Polycentropus sp	MI		+					
52530	Hydropsyche depravata group	F		+					
74100	Simulium sp	F		+					
77120	Ablabesmyia mallochi	F		+					
77500	Conchapelopia sp	F		+					
79720	Diamesa sp	X F		+					
84000	Parachironomus sp	MT		+					
84210	Paratendipes albimanus or P. duplicatus	F		+					
85500	Paratanytarsus sp	F		+					

No. Quantitative Taxa: 0 Total Taxa; 23
 No. Qualitative Taxa: 23 ICI: F
 Number of Organisms: 0 Qual EPT: 5
 Aquatic Life Use: CWH Taxa: 1

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-401		River: Adena Brook		Coll. Date: <i>09/16/2020</i>		RM: 0.70	
Site ID: ADN02		Location: <i>Dst. N. High Street - dst. storm sewer outfall</i>				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
01801	Turbellaria	F		+			
03600	Oligochaeta	T		+			
04901	Erpobdellidae	MT		+			
06700	Crangonyx sp	MT		+			
07800	Cambarus sp			+			
11120	Baetis flavistriga	F		+			
11130	Baetis intercalaris	F		+			
13521	Stenonema femoratum	F		+			
21200	Calopteryx sp	F		+			
22300	Argia sp	F		+			
28705	Pachydiplax longipennis	T		+			
50301	Chimarra aterrima	MI		+			
51100	poss. Cernotina sp or Polycentropus sp	MI		+			
52200	Cheumatopsyche sp	F		+			
52530	Hydropsyche depravata group	F		+			
71900	Tipula sp	F		+			
74100	Simulium sp	F		+			
77120	Ablabesmyia mallochi	F		+			
78350	Meropelopia sp	X	F	+			
81650	Parametriocnemus sp	X	F	+			
84210	Paratendipes albimanus or P. duplicatus	F		+			
84450	Polypedilum (Uresipedilum) flavum	F		+			

No. Quantitative Taxa: 0 Total Taxa; 22
 No. Qualitative Taxa: 22 ICI: F
 Number of Organisms: 0 Qual EPT: 7
 Aquatic Life Use: CWH Taxa: 2

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-401		River: Adena Brook		Coll. Date: <i>09/14/2020</i>		RM: 1.10	
Site ID: ADN03		Location: <i>Dst. Overbrook Dr. adj. Canyon Drive - dst. Storm sewer</i>				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
01801	Turbellaria	F		+			
03600	Oligochaeta	T		+			
04935	Erpobdella punctata punctata	MT		+			
06700	Crangonyx sp	MT		+			
07800	Cambarus sp			+			
11120	Baetis flavistriga	F		+			
11130	Baetis intercalaris	F		+			
21200	Calopteryx sp	F		+			
22300	Argia sp	F		+			
50301	Chimarra aterrima	MI		+			
51100	poss. Cernotina sp or Polycentropus sp	MI		+			
52530	Hydropsyche depravata group	F		+			
71900	Tipula sp	F		+			
77120	Ablabesmyia mallochi	F		+			
77800	Helopelopia sp	F		+			
78350	Meropelopia sp	X F		+			
83040	Dicrotendipes neomodestus	F		+			
84210	Paratendipes albimanus or P. duplicatus	F		+			
84300	Phaenopsectra obediens group	F		+			
84450	Polypedilum (Uresipedilum) flavum	F		+			
85625	Rheotanytarsus sp	F		+			

No. Quantitative Taxa: 0 Total Taxa; 21
 No. Qualitative Taxa: 21 ICI: F
 Number of Organisms: 0 Qual EPT: 5
 Aquatic Life Use: CWH Taxa: 1

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-401		River: Adena Brook		Coll. Date: <i>09/14/2020</i>		RM: 1.60	
Site ID: ADN04		Location: <i>Intersection of Overbrook Dr. and Yaronia Dr. - ust. control</i>				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
01801	Turbellaria	F		+			
03600	Oligochaeta	T		+			
04664	Helobdella stagnalis	T		+			
04901	Erpobdellidae	MT		+			
04935	Erpobdella punctata punctata	MT		+			
07800	Cambarus sp			+			
11120	Baetis flavistriga	F		+			
11130	Baetis intercalaris	F		+			
21200	Calopteryx sp	F		+			
22300	Argia sp	F		+			
50301	Chimarra aterrima	MI		+			
51100	poss. Cernotina sp or Polycentropus sp	MI		+			
52200	Cheumatopsyche sp	F		+			
52530	Hydropsyche depravata group	F		+			
71900	Tipula sp	F		+			
77500	Conchapelopia sp	F		+			
77800	Helopelopia sp	F		+			
78350	Meropelopia sp	X	F	+			
79720	Diamesa sp	X	F	+			
81650	Parametricnemus sp	X	F	+			
84210	Paratendipes albimanus or P. duplicatus		F	+			
85625	Rheotanytarsus sp		F	+			

No. Quantitative Taxa: 0 Total Taxa; 22
 No. Qualitative Taxa: 22 ICI: F
 Number of Organisms: 0 Qual EPT: 6
 Aquatic Life Use: CWH Taxa: 3

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-403		River: Rush Run		Coll. Date: 08/06/2020		RM: 0.20	
Site ID: RSH01		Location: <i>ust. Mouth/confluence w. Olentangy River</i>				Sample:	
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol. Qt./Ql.
01801	Turbellaria		F	+			
03600	Oligochaeta		T	+			
04664	Helobdella stagnalis		T	+			
04935	Erpobdella punctata punctata		MT	+			
04964	Erpobdella microstoma		MT	+			
05800	Caecidotea sp		T	+			
06700	Crangonyx sp		MT	+			
11120	Baetis flavistriga		F	+			
11130	Baetis intercalaris		F	+			
21200	Calopteryx sp		F	+			
21300	Hetaerina sp		F	+			
22001	Coenagrionidae		T	+			
23700	Anax sp		MT	+			
45900	Notonecta sp		T	+			
50301	Chimarra aterrima		MI	+			
51100	poss. Cernotina sp or Polycentropus sp		MI	+			
52200	Cheumatopsyche sp		F	+			
52530	Hydropsyche depravata group		F	+			
53800	Hydroptila sp		F	+			
71900	Tipula sp		F	+			
74100	Simulium sp		F	+			
77120	Ablabesmyia mallochii		F	+			
77500	Conchapelopia sp		F	+			
78350	Meropelopia sp	X	F	+			
79720	Diamesa sp	X	F	+			
81650	Parametriocnemus sp	X	F	+			
81825	Rheocricotopus (Psilocricotopus) robacki		F	+			
84210	Paratendipes albimanus or P. duplicatus		F	+			
84300	Phaenopsectra obediens group		F	+			
84470	Polypedilum (P.) illinoense		T	+			
84540	Polypedilum (Tripodura) scalaenum group		F	+			
95100	Physella sp		T	+			
No. Quantitative Taxa: 0		Total Taxa; 32					
No. Qualitative Taxa:		32	ICI: F				
Number of Organisms: 0		Qual EPT: 7					
Aquatic Life Use:		CWH Taxa: 3					

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-403		River: Rush Run		Coll. Date: 08/24/2020		RM: 1.10			
Site ID: RSH02		Location: Dst. Park Blvd. in Park Blvd. Park		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria		F	+					
03600	Oligochaeta		T	+					
04666	Helobdella papillata		MT	+					
05800	Caecidotea sp		T	+					
06700	Crangonyx sp		MT	+					
11120	Baetis flavistriga		F	+					
22001	Coenagrionidae		T	+					
22300	Argia sp		F	+					
51100	poss. Cernotina sp or Polycentropus sp		MI	+					
52530	Hydropsyche depravata group		F	+					
53800	Hydroptila sp		F	+					
74100	Simulium sp		F	+					
78350	Meropelopia sp	X	F	+					
80411	Cricotopus (Isocladius) sp nr. absurdus		MT	+					
80420	Cricotopus (C.) bicinctus		T	+					
80430	Cricotopus (C.) tremulus group		MT	+					
80740	Eukiefferiella claripennis group		MT	+					
84470	Polypedilum (P.) illinoense		T	+					
95100	Physella sp		T	+					

No. Quantitative Taxa:	0	Total Taxa;	19
No. Qualitative Taxa:	19	ICI:	P
Number of Organisms:	0	Qual EPT:	4
Aquatic Life Use:		CWH Taxa:	1

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-403		River: Rush Run		Coll. Date: 08/24/2020		RM: 2.00			
Site ID: RSH03		Location: <i>ust. Proprietors Rd.</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		+					
03600	Oligochaeta	T		+					
08601	Hydrachnidia	F		+					
11120	Baetis flavistriga	F		+					
74100	Simulium sp	F		+					
80420	Cricotopus (C.) bicinctus	T		+					
80430	Cricotopus (C.) tremulus group	MT		+					
84470	Polypedilum (P.) illinoense	T		+					
84960	Pseudochironomus sp	F		+					
No. Quantitative Taxa: 0		Total Taxa: 9							
No. Qualitative Taxa:		9		ICI: P					
Number of Organisms: 0		Qual EPT: 1							
Aquatic Life Use:		CWH Taxa: 0							

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: 02-403		River: Rush Run		Coll. Date: 08/24/2020		RM: 3.00			
Site ID: RSH04		Location: <i>dst. Shrock Rd.</i>		Sample:					
Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa	Tol.	Qt./Ql.
01801	Turbellaria	F		+					
03600	Oligochaeta	T		+					
04666	Helobdella papillata	MT		+					
07800	Cambarus sp			+					
08601	Hydrachnidia	F		+					
11200	Callibaetis sp	MT		+					
22001	Coenagrionidae	T		+					
28705	Pachydiplax longipennis	T		+					
60900	Peltodytes sp	MT		+					
74501	Ceratopogonidae	T		+					
77140	Ablabesmyia peleensis			+					
78200	Larsia sp	MT		+					
78655	Procladius (Holotanypus) sp	MT		+					
80510	Cricotopus (Isocladius) sylvestris group	T		+					
82820	Cryptochironomus sp	F		+					
83040	Dicrotendipes neomodestus	F		+					
84470	Polypedilum (P.) illinoense	T		+					
95100	Physella sp	T		+					

No. Quantitative Taxa: 0 Total Taxa; 18
 No. Qualitative Taxa: 18 ICI: P
 Number of Organisms: 0 Qual EPT: 1
 Aquatic Life Use: CWH Taxa: 0

Table C-13. Macroinvertebrate taxa for sites in the Olentangy River tributaries collected by MBI in 2020.

River Code: **02-483** River: **Beechwold Run (Unnamed Trib to Olentangy R @** Coll. Date: *09/16/2020* RM: **0.30**
 Site ID: **BCH01** Location: *long Riverview Park Drive dst. Rustic Bridge - dst. Outfall* Sample:

Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.	Taxa Code	Taxa	CWH Taxa Tol.	Qt./Ql.
01801	Turbellaria	F	+				
03600	Oligochaeta	T	+				
11120	Baetis flavistriga	F	+				
71900	Tipula sp	F	+				
80430	Cricotopus (C.) tremulus group	MT	+				
80740	Eukiefferiella claripennis group	MT	+				
84470	Polypedilum (P.) illinoense	T	+				

No. Quantitative Taxa: 0 Total Taxa: 7
 No. Qualitative Taxa: 7 ICI: VP
 Number of Organisms: 0 Qual EPT: 1
 Aquatic Life Use: CWH Taxa: 0

APPENDIX D-1: Scioto_Olentangy River Mainstem and Tributaries QHEI Metrics

Appendix D-1. QHEI metric scores for sites in the Scioto River Columbus study area .

River Mile	QHEI Metrics								Narrative
	QHEI	Substrate	Cover	Channel	Riparian	Pool	Riffle	Gradient/ Score	
02-001 Scioto River									
Year: 2020									
136.00	86.25	16.0	16.0	16.0	8.2	12.0	8.0	4.53 - (10)	Excellent
133.25	83.75	16.0	17.0	14.0	6.7	12.0	8.0	2.23 - (10)	Excellent
132.80	82.75	17.0	13.0	18.0	6.7	10.0	8.0	2.23 - (10)	Excellent
131.95	64.00	16.0	15.0	12.0	4.0	7.0	0.0	6.10 - (10)	Good
130.45	57.00	12.0	15.0	8.0	5.0	7.0	0.0	6.50 - (10)	Fair
129.23	83.75	16.0	17.0	16.0	7.2	11.0	6.5	1.80 - (10)	Excellent
127.60	80.25	16.0	15.0	13.0	9.2	9.0	8.0	1.80 - (10)	Excellent
127.25	62.50	14.0	15.0	10.0	6.5	7.0	0.0	1.80 - (10)	Good
125.05	65.50	14.0	15.0	13.0	6.5	7.0	0.0	1.80 - (10)	Good
124.20	81.75	14.0	15.0	17.5	6.7	12.0	6.5	1.80 - (10)	Excellent
117.80	77.50	16.0	16.0	14.0	6.5	10.0	5.0	1.60 - (10)	Excellent
115.75	88.00	18.0	15.0	20.0	6.0	11.0	8.0	1.70 - (10)	Excellent
113.85	90.00	18.0	16.0	19.0	7.5	12.0	7.5	1.70 - (10)	Excellent
109.23	83.00	16.0	13.0	20.0	7.5	12.0	6.5	1.00 - (8)	Excellent
107.35	82.00	16.0	14.0	19.0	6.5	12.0	6.5	1.00 - (8)	Excellent
105.10	83.75	16.0	13.0	19.5	9.2	12.0	6.0	1.00 - (8)	Excellent
101.83	85.25	18.0	14.0	18.5	8.2	11.0	7.5	1.00 - (8)	Excellent
100.05	89.50	18.0	16.0	19.0	7.5	13.0	7.0	1.70 - (10)	Excellent
99.35	89.00	18.0	16.0	19.5	5.5	13.0	8.0	1.70 - (10)	Excellent
98.50	68.75	14.0	16.0	13.5	5.2	10.0	0.0	1.70 - (10)	Good
02-100 Big Walnut Creek									
Year: 2020									
9.80	82.00	16.0	16.0	16.5	7.5	10.0	8.0	2.60 - (8)	Excellent
02-400 Olentangy River									
Year: 2020									
12.90	71.50	15.0	15.0	12.0	8.5	6.0	5.0	5.78 - (10)	Good
8.40	77.75	15.5	14.0	14.0	8.2	10.0	8.0	2.91 - (8)	Excellent
7.10	73.75	16.0	16.0	13.0	8.2	6.0	6.5	2.59 - (8)	Good
5.65	56.25	10.0	15.0	7.5	8.7	7.0	0.0	2.59 - (8)	Fair
3.95	80.00	18.0	16.0	14.0	8.5	9.0	6.5	2.63 - (8)	Excellent
02-401 Adena Brook									
Year: 2020									
1.70	78.00	18.5	15.0	14.0	6.5	9.0	7.0	40.00 - (8)	Excellent
0.80	69.50	16.0	15.0	15.5	9.0	5.0	5.0	47.60 - (4)	Good
0.52	61.50	12.0	11.0	12.5	9.0	4.0	5.0	40.00 - (8)	Good
0.23	80.50	17.0	15.0	17.5	8.5	7.0	5.5	22.20 - (10)	Excellent
02-403 Rush Run									

Appendix 8-1. QHEI metric scores for sites in the Scioto River Columbus study area .

River Mile	QHEI Metrics								Narrative
	QHEI	Substrate	Cover	Channel	Riparian	Pool	Riffle	Gradient/Score	
Year: 2020									
3.55	26.50	0.0	11.0	5.0	3.5	1.0	0.0	8.70 - (6)	Very Poor
2.90	50.00	17.5	7.0	11.5	5.0	3.0	0.0	8.70 - (6)	Fair
1.90	57.00	16.0	8.0	14.0	10.0	3.0	2.0	83.30 - (4)	Fair
1.03	57.50	21.0	10.0	11.0	0.0	3.0	5.5	30.30 - (8)	Fair
0.24	69.50	17.0	13.0	17.0	9.0	5.0	4.5	62.50 - (4)	Good
02-483 Beechwold Run (Unnamed Trib. to Olentangy R. @ RM 7.3)									
Year: 2020									
0.10	63.50	16.0	12.0	17.0	7.0	5.0	2.5	333.3 - (4)	Good

APPENDIX D-2: Scioto_Olentangy River Mainstem and Tributaries QHEI Field Sheets

Stream & Location: Big Walnut Creek @ Lockbourne Rd *RM:* 98 *Date:* 8/27/2020
BWOC *Scorers Full Name & Affiliation:* MAS

River Code: 02-100 *STORET #:* _____ *Lat./Long.:* 39.8515 182.9687 *Office verified location*

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR/SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<i>Substrate</i> 16
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input checked="" type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]	<input type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> FREE [1]	<input type="checkbox"/> EXTENSIVE [-2]	
<input checked="" type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]		<input type="checkbox"/> HARDPAN [0]	<input checked="" type="checkbox"/> MODERATE [-1]	<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> NONE [1]		
<input type="checkbox"/> BEDROCK [5]				<input type="checkbox"/> RIP/RAP [0]			

Check ONE (Or 2 & average)

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>1</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70cm [2]	<u>0</u> OXBOWS, BACKWATERS [1]	<input checked="" type="checkbox"/> EXTENSIVE >75% [11]
<u>0</u> OVERHANGING VEGETATION [1]	<u>2</u> ROOTWADS [1]	<u>1</u> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<u>3</u> SHALLOWS (IN SLOW WATER) [1]	<u>2</u> BOULDERS [1]	<u>2</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<u>2</u> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Check ONE (Or 2 & average)

Comments

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	<i>Pool / Current</i> 10
<input type="checkbox"/> 0.4-0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-0.4m [1]		<input checked="" type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	

Indicate for reach - pools and riffles.

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

6] GRADIENT (2.6 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (547 mi²)

%POOL: %GLIDE:
 %RUN: %RIFFLE:

Gradient
Maximum 10 8

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

- 1st _____ cm
- 2nd _____ cm

CJ RECREATION

POOL: > 100r2 > 3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

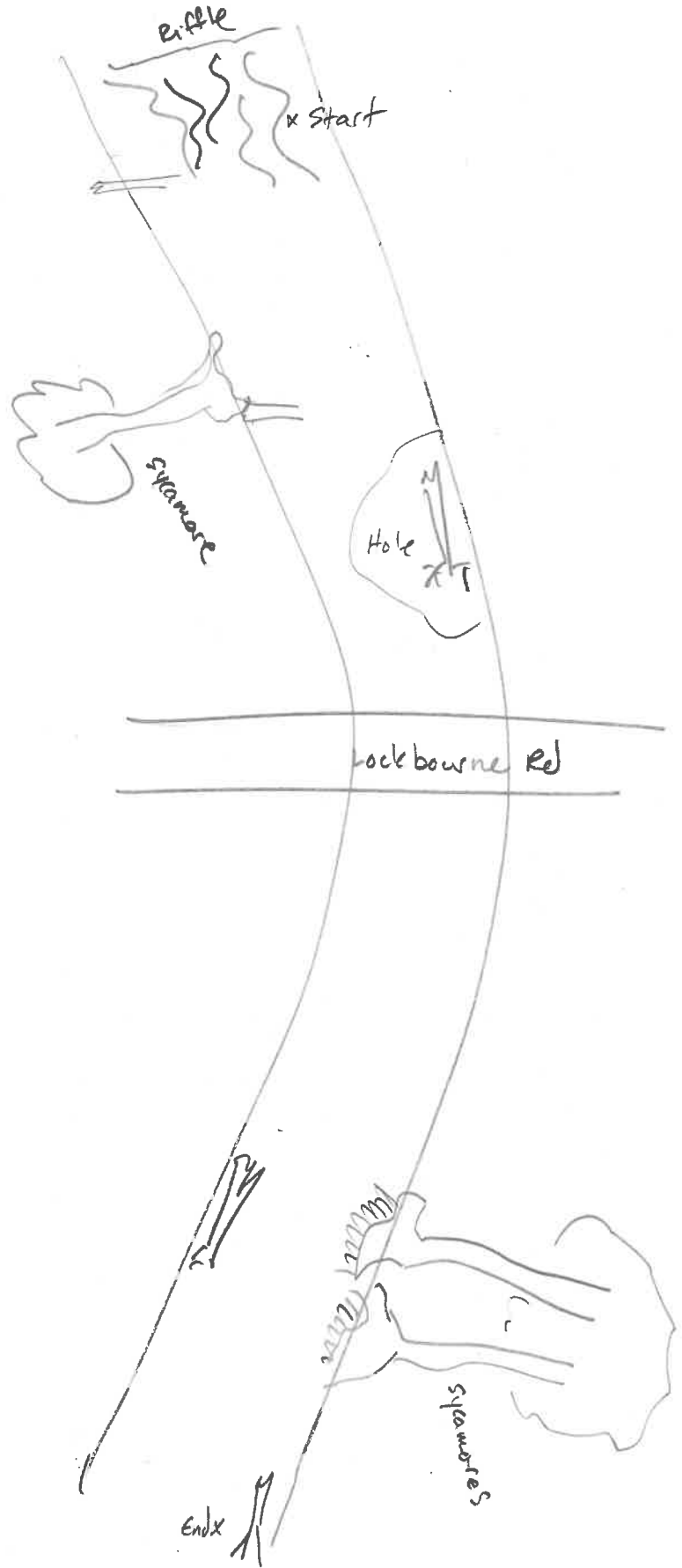
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Pat 5th Ave RM: 136_05 Date: 8/28/2020

SROI Scorers Full Name & Affiliation: River Code: 02-001- STORET#: Lat/Long: 39.9847 183.0667 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR / SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], OVERHANGING VEGETATION [1], SHALLOWS (IN SLOW WATER) [1], ROOTMATS [1]. POOLS > 70cm [2], ROOTWADS [1], BOULDERS [1]. OXBOWS, BACKWATERS [1], AQUATIC MACROPHYTES [1], LOGS OR WOODY DEBRIS [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Pool / Current Maximum 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8.

6] GRADIENT (4.93 ft/mi) DRAINAGE AREA (1050 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD STAGE

- BOAT
 - WADE
 - L. LINE
 - OTHER
- 1st-sample pass-- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

CJ RECREATION

AREA DEPTH

- >100m²
- >3ft

BJAESTHETICS

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

DJ MAINTENANCE

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQ-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

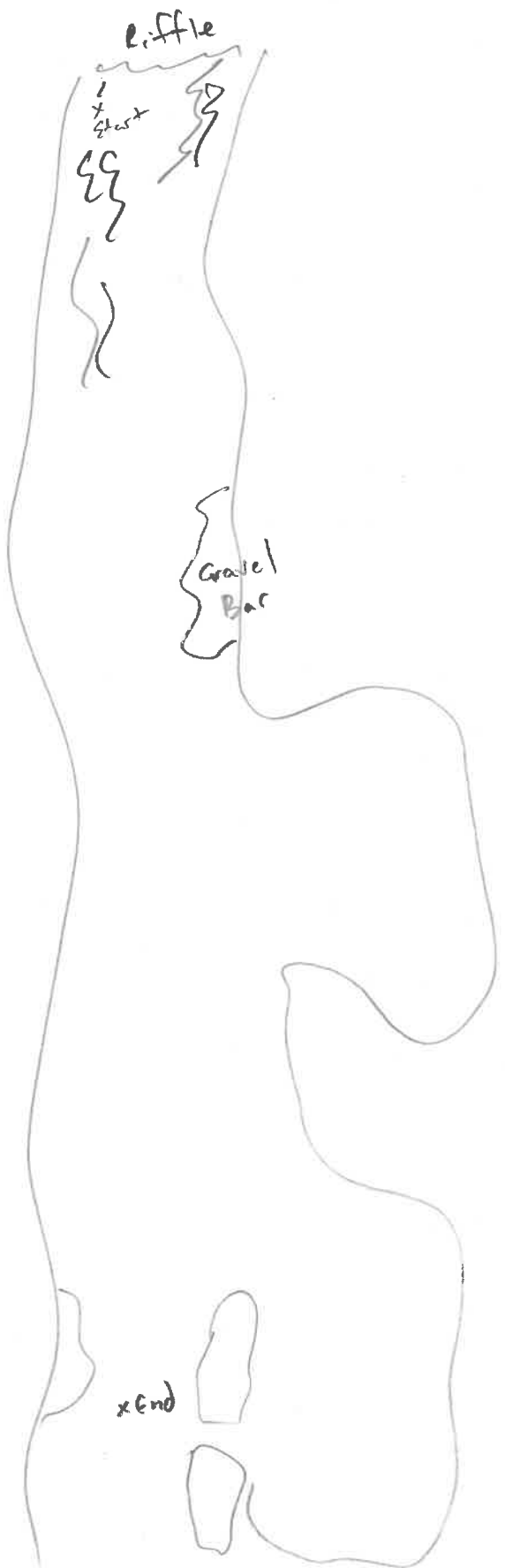
EJ ISSUES

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

FJ MEASUREMENTS

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dist Dublin Water Treatment Dam RM: 132.4 Date: 8/04/2020

River Code: 02-001 STORET#: Lat/Long: 39.9670 183.0341 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment table with categories: BEST TYPES, POOL RIFFLE, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for various substrate types and a score box for 16.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment table with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score box for 17.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment table with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a score box for 14.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment table with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes checkboxes and a score box for 6.75.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment table with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes checkboxes and a score box for 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle / Run Quality assessment table with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score box for 8.

6] GRADIENT (2.23 ft/mi) DRAINAGE AREA (1070 mi^2) Assessment table with categories: GRADIENT, DRAINAGE AREA, % POOL, % GLIDE, % RUN, % RIFFLE. Includes checkboxes and a score box for 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

Stream Drawing:



Stream & Location: Scioto River Dist 1-670 RM: 133.0 Date: 8/10/2020

River Code: 02-001- STORET#: Lat/Long: 39.9666 183.0267 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR/SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION: NONE/LITTLE [3], MODERATE [2], HEAVY/SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], SLOW [1], VERY FAST [1], INTERSTITIAL [-1], FAST [1], INTERMITTENT [-2], MODERATE [1], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1].

6] GRADIENT (2.23 ft/mi) DRAINAGE AREA (1070 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE:

AJ SAMPLED REACH
Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- HIGH
- UP
- NORMAL
- LOW
- DRY

1st -sample pass-- 2nd

CLARITY

- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

- AREA >100ft²
- DEPTH >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

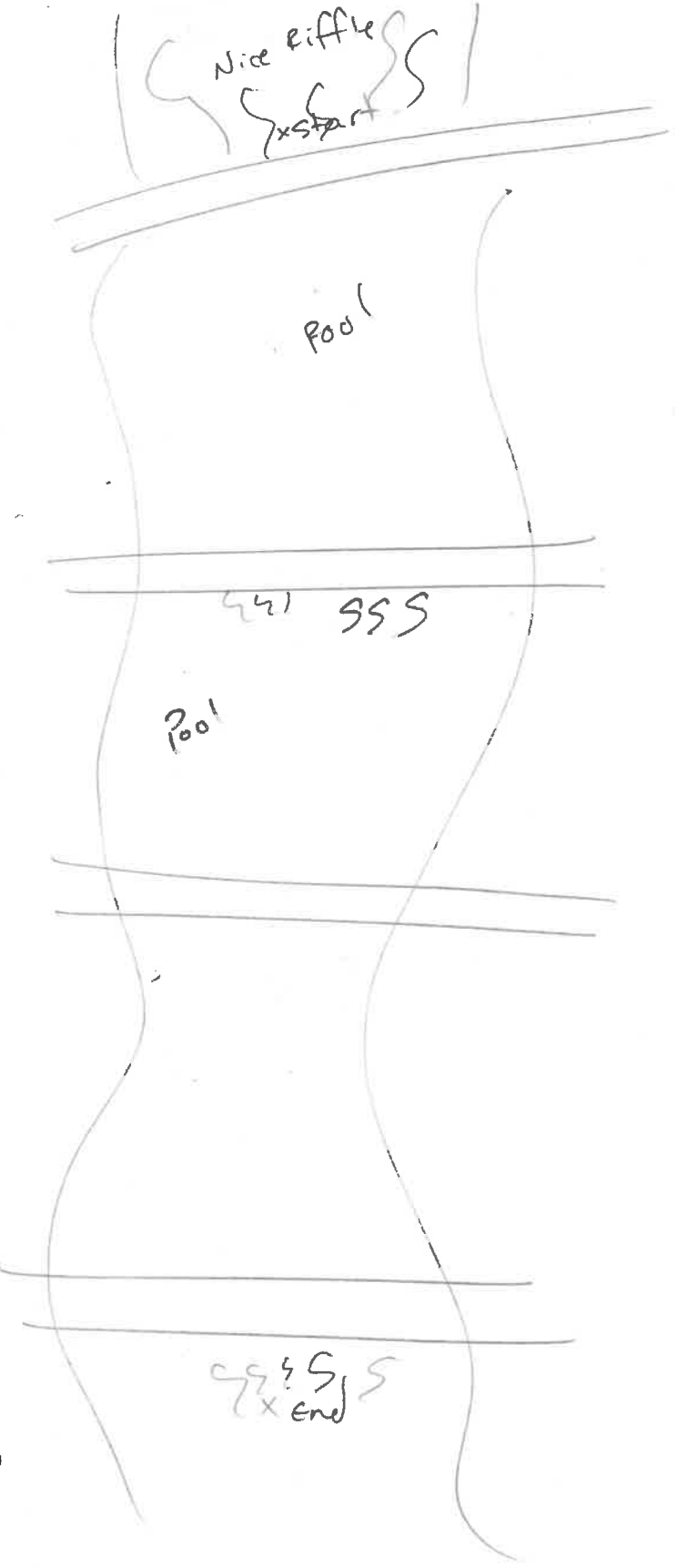
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dist RR Bridge Sko4

RM: 132.1 Date: 7/30/2020

River Code: 02-001 STORET #:

Scorers Full Name & Affiliation: MAS - MBI

Lat/Long: 39.9644 183.0128

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for various substrate types and a score of 16.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score of 15.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a score of 17.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank erosion and riparian zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes checkboxes and a score of 4.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool/glide and riffle/run quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes checkboxes and a score of 1.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average)

NO RIFFLE [metric=0]

Riffle/run quality assessment grid with categories: RIFFLE-DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score of 0.

6] GRADIENT (6.10 ft/mi) DRAINAGE AREA (1610 mi^2)

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- HIGH
- UP
- NORMAL
- LOW
- DRY

1st-sample pass-- 2nd

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

1st. --- cm
2nd. --- cm

C) RECREATION

AREA DEPTH
POOL: > 100ft² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

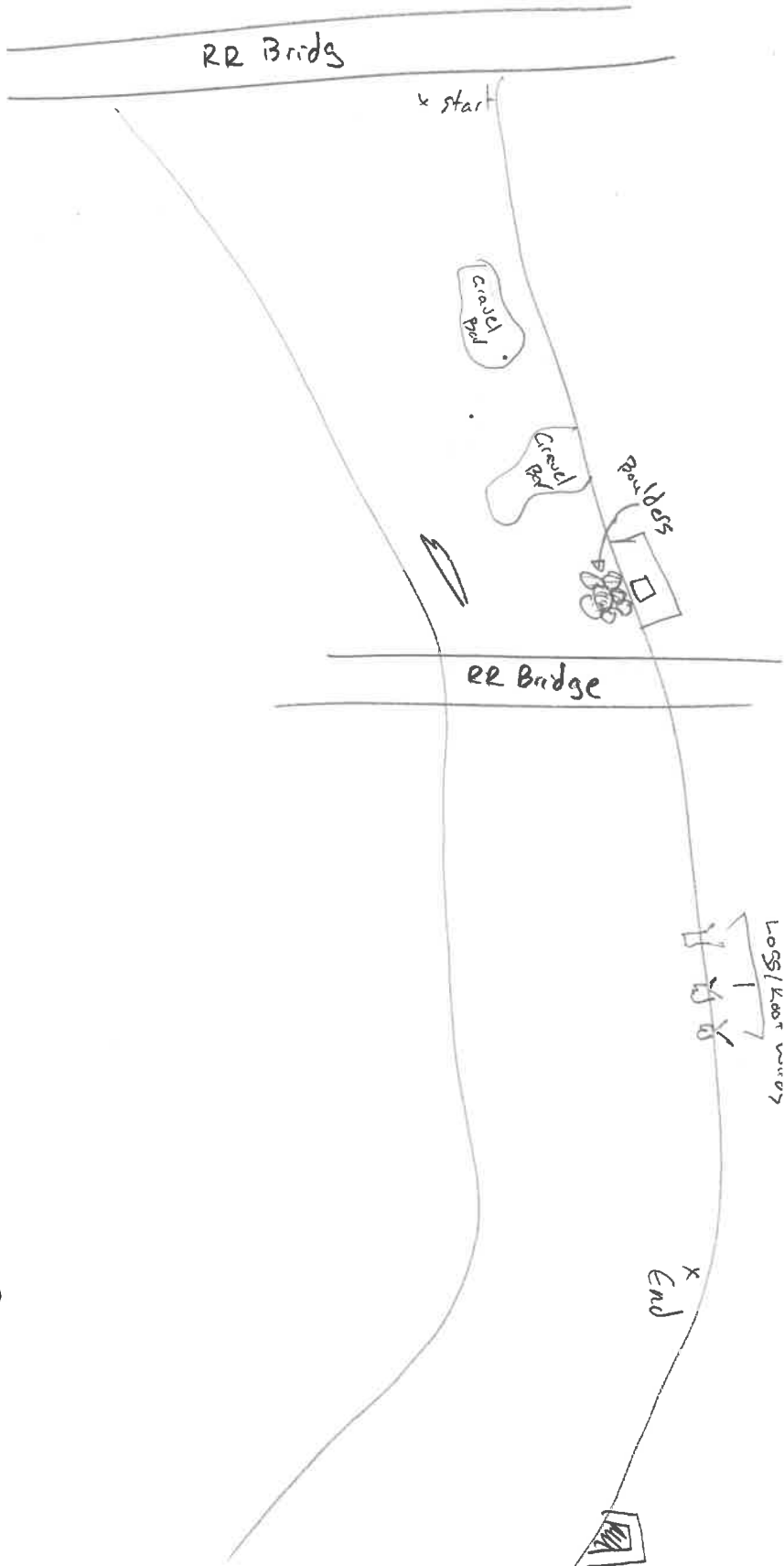
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Ust Greenlawn Dam RM: 130.4 Date: 7/30/2020

SR05 Scorers Full Name & Affiliation: MAS -> MBF

River Code: 02-001-STORET# Lat/Long: 39.9498 183.0138 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a circled score of 12.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a circled score of 15.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a circled score of 8.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a circled score of 5.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, and Recreation Potential. Includes a circled score of 7.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species. Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a circled score of 0.

6] GRADIENT (6.5 ft/mi) DRAINAGE AREA (1620 mi2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a circled score of 10.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
 - 20-<40 cm
 - 40-70 cm
 - > 70 cm/CTB
 - SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm
2nd _____ cm

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM/ SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

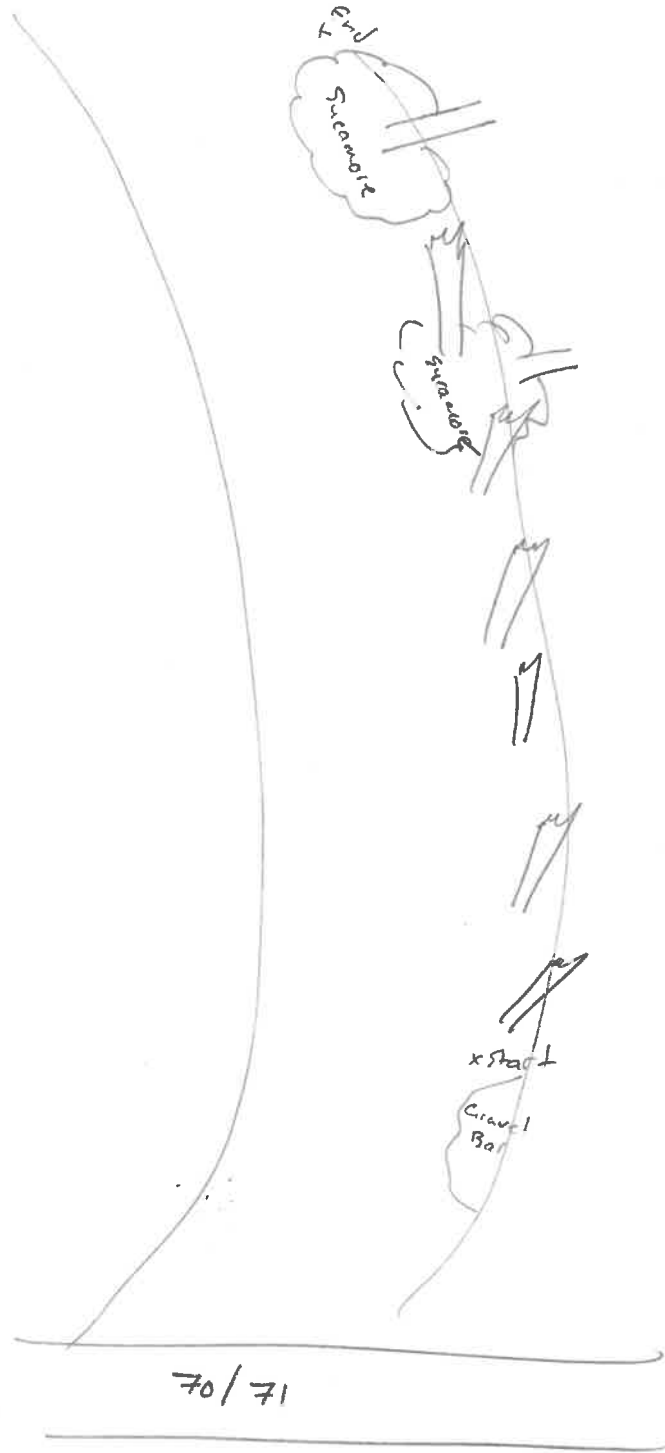
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dst. Greenlawns
SR06

RM: 129.4 Date: 7/31/2020

Scorers Full Name & Affiliation:

River Code: 02-001 - STORET#:

Lat./Long.: 39.9384 182.9993

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment table with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes checkboxes for various substrate types and a circled score of 10.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

Instream cover assessment table with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a circled score of 17.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel morphology assessment table with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, and STABILITY. Includes checkboxes and a circled score of 16.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank erosion and riparian zone assessment table with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, and CONSERVATION TILLAGE. Includes checkboxes and a circled score of 7.25.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool/glide and riffle/run quality assessment table with categories: MAXIMUM DEPTH, CHANNEL WIDTH, and CURRENT VELOCITY. Includes checkboxes and a circled score of 11.

Recreation Potential Primary Contact Secondary Contact

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle/run quality assessment table with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, and RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a circled score of 6.5.

6] GRADIENT (1.8 ft/mi) DRAINAGE AREA (1620 mi^2)

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10

A/ SAMPLED REACH

Check ALL that apply

METHOD

BOAT

WADE

L. LINE

OTHER

DISTANCE

0.5 Km

0.2 Km

0.15 Km

0.12 Km

OTHER

CLARITY

1st --sample pass-- 2nd

< 20 cm

20-40 cm

40-70 cm

> 70 cm/ CTB

SECCHI DEPTH

meters

CANOPY

> 85% - OPEN

55%-<85%

30%-<55%

10%-<30%

<10% - CLOSED

CL RECREATION

AREA DEPTH

POOL: >100ft² >3ft

B/ AESTHETICS

NUISANCE ALGAE

INVASIVE MACROPHYTES

EXCESS TURBIDITY

DISCOLORATION

FOAM / SCUM

OIL SHEEN

TRASH / LITTER

NUISANCE ODOR

SLUDGE DEPOSITS

CSOS/ISSOS/OUTFALLS

D/ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMOURED / SLUMPS

ISLANDS / SCoured

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

E/ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGCON

WASH H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

F/ MEASUREMENTS

\bar{x} width

\bar{x} depth

max. depth

\bar{x} bankfull width

bankfull \bar{x} depth

W/D ratio

bankfull max. depth

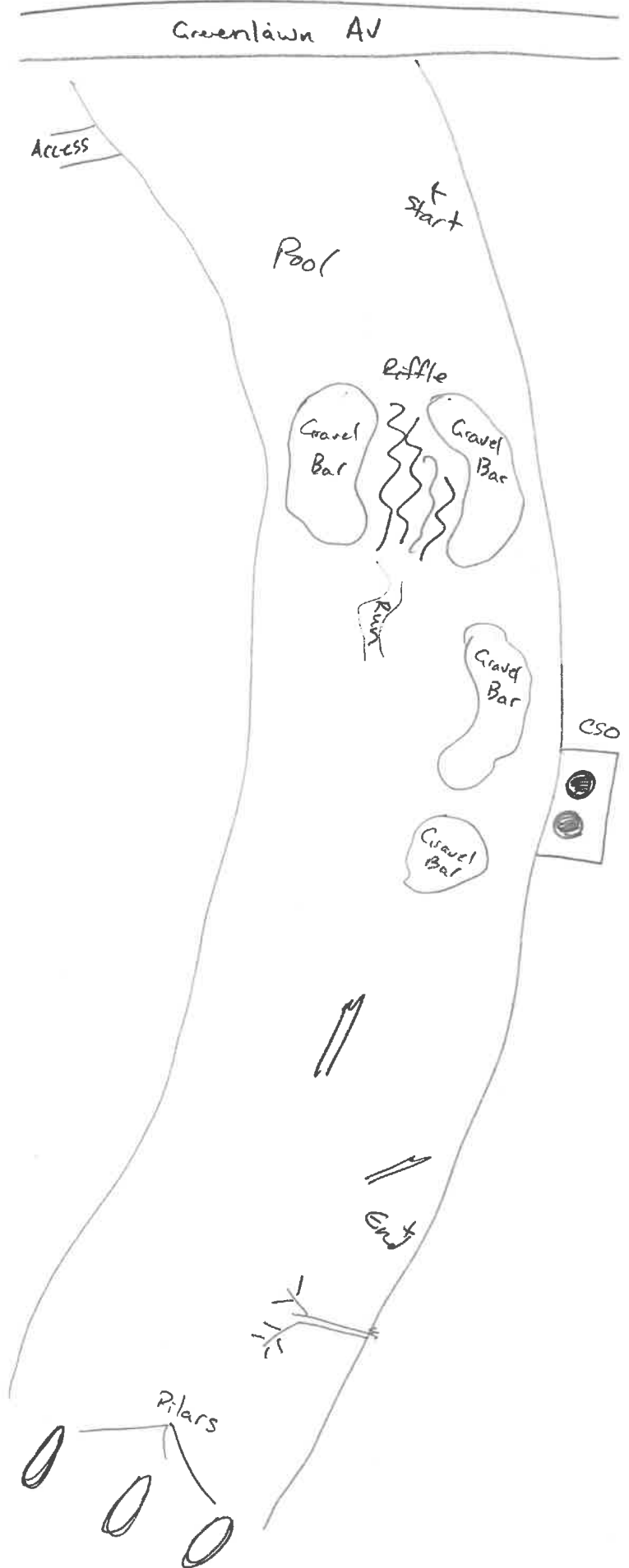
floodprone \bar{x} width

entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



Stream & Location: Scioto RIVER 8R07 *RM:* 127.7 *Date:* 8/25/2020

Dst. 104 *Scorers Full Name & Affiliation:* MAS
River Code: 02-001- *STORET #:* _____ *Lat./Long.:* 39.9166 183.0094 *Office verified location*

1] SUBSTRATE Check *ONLY* Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	16 Substrate Maximum 20
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> SANDSTONE [0]	<input checked="" type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> FREE [1]	
<input checked="" type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> COAL FINES [-2]	<input checked="" type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]						<input type="checkbox"/> MODERATE [-1]	
						<input checked="" type="checkbox"/> NORMAL [0]	
						<input type="checkbox"/> NONE [1]	

Check ONE (Or 2 & average)

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>0</u> UNDERCUT BANKS [1]	<u>3</u> POOLS > 70cm [2]	<u>0</u> OXBOWS, BACKWATERS [1]	AMOUNT
<u>0</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<u>1</u> AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>3</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<u>1</u> ROOTMATS [1]			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20 13

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel Maximum 20 13

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian Maximum 10 9.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact <small>(circle one and comment on back)</small>
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1] <input checked="" type="checkbox"/> SLOW [1]	
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1] <input type="checkbox"/> INTERSTITIAL [-1]	

Indicate for reach - pools and riffles.

Comments

Pool / Current Maximum 12 9

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

Riffle / Run Maximum 8 8

6] GRADIENT 1.8 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1620 mi²)

%POOL: 0 %GLIDE: 0

%RUN: 0 %RIFFLE: 0

Comments

Gradient Maximum 10 10

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st-sample pass-- 2nd
 - HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20--<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

C) RECREATION

AREA DEPTH
POOL: > 100m² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entranch. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River 808.2 **RM:** 127.4 **Date:** 8/25/2020
 Ust. Jackson Pike WWTP

River Code: 02-001 - **STORET #:** _____ **Lat./Long.:** 39.9118 183.0103 (NAD 83 - decimal °) **Office verified location**

1) SUBSTRATE Check **ONLY Two** substrate **TYPE BOXES**; estimate % or note every type present

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]	_____	<input type="checkbox"/> HARDPAN [4]	_____	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	_____	<input type="checkbox"/> DETRITUS [3]	_____	<input checked="" type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	_____	<input type="checkbox"/> MUCK [2]	_____	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	_____	<input type="checkbox"/> SILT [2]	_____	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input checked="" type="checkbox"/> SAND [6]	_____	<input type="checkbox"/> ARTIFICIAL [0]	_____	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	_____			<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments _____

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

0 UNDERCUT BANKS [1]	3 POOLS > 70cm [2]	2 OXBOWS, BACKWATERS [1]	AMOUNT
0 OVERHANGING VEGETATION [1]	1 ROOTWADS [1]	0 AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
3 SHALLOWS (IN SLOW WATER) [1]	1 BOULDERS [1]	2 LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
1 ROOTMATS [1]			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for **EACH BANK** (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Comments _____

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> MODERATE [1]

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments _____

6) GRADIENT (1.8 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1620 mi²)

%POOL: **%GLIDE:** **%RUN:** **%RIFFLE:**

Comments _____

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

STAGE

- 1st--sample pass--2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

CLARITY

- 1st 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH

POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto Rives SLO8 RM: 126.55 Date: 8/26/2020

Dist: Jackson Peter WWRP Scorers Full Name & Affiliation:

River Code: 02-001 STORET #: _____ Lat./Long.: 39.9016183.0033 Office verified location

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	Substrate 16 Maximum 20
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]	
<input checked="" type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more <input type="checkbox"/> 2 <input type="checkbox"/> 3 or less [0]				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NORMAL [0]	
<i>Comments</i>				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/>	<input type="checkbox"/> NONE [1]	
				<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/>		

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter rootwad that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>1</u> UNDERCUT BANKS [1]	<u>3</u> POOLS > 70cm [2]	<u>1</u> OXBOWS, BACKWATERS [1]	AMOUNT
<u>0</u> OVERHANGING VEGETATION [1]	<u>2</u> ROOTWADS [1]	<u>e</u> AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
<u>3</u> SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>2</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<u>2</u> ROOTMATS [1]			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<i>Comments</i>			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]
			Cover Maximum 20 16

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	
<i>Comments</i>			Channel Maximum 20 18

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]
<i>Comments</i>		Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10 5.5
		<input type="checkbox"/> CONSERVATION TILLAGE [1]
		<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
		<input type="checkbox"/> MINING / CONSTRUCTION [0]

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	Pool / Current Maximum 12 10
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
<i>Comments</i>		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	
		Indicate for reach - pools and riffles.	

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
<i>Comments</i>			Riffle / Run Maximum 8 7
			<input type="checkbox"/> EXTENSIVE [-1]

6] **GRADIENT** (1.8 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1630 mi²)

% POOL: % GLIDE:

% RUN: % RIFFLE:

Gradient
Maximum 10
10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

CJ RECREATION

AREA DEPTH
POOL: > 100ft? > 3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- FOIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

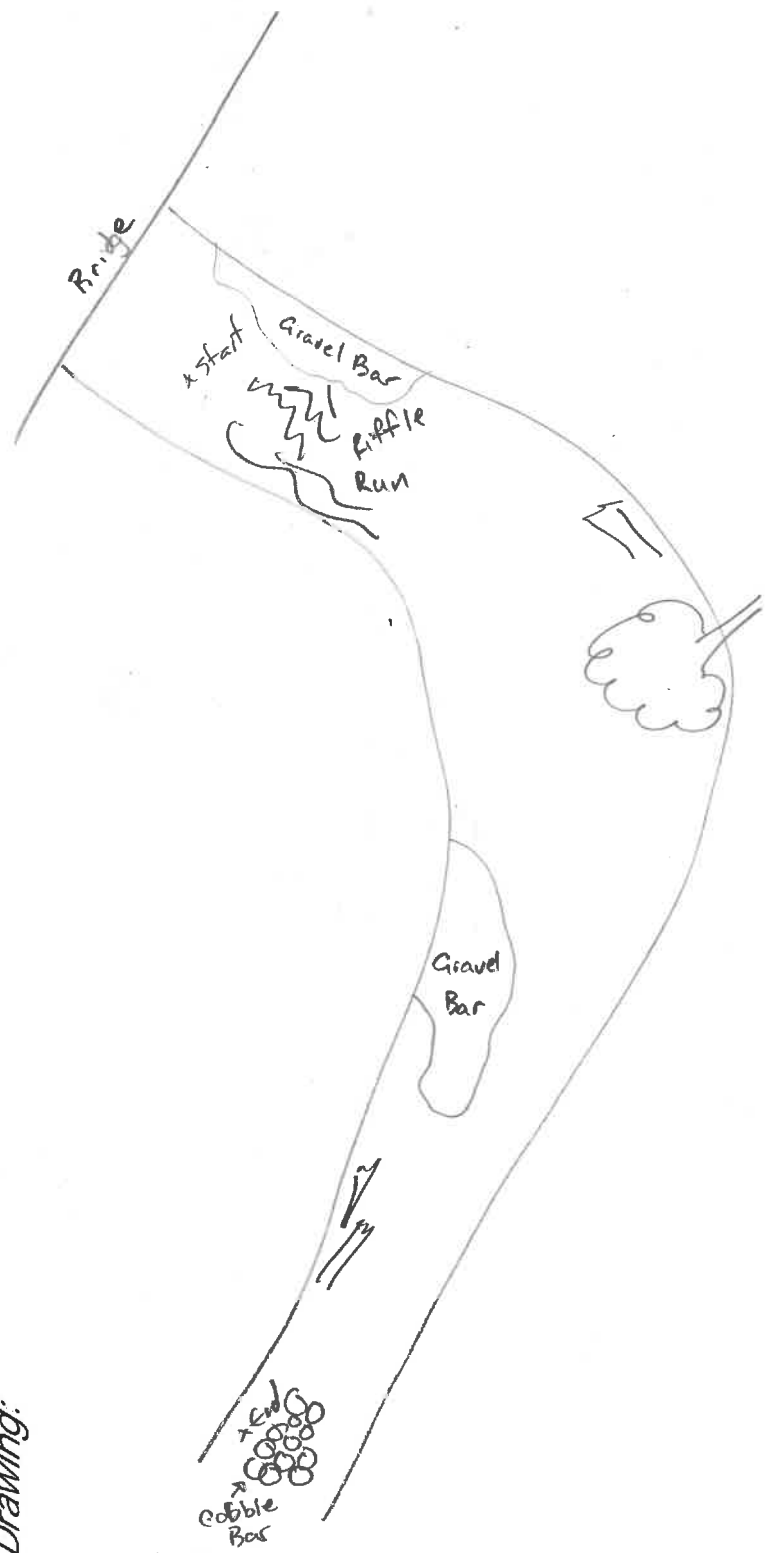
- WWTP / CSO / NPDES / INDUSTRY
- HARMED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs - CONSTRUCTION - SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dsl. American Aggregates Bridge RM: 125.2 Date: 8/26/2020

SR09 Scorers Full Name & Affiliation: River Code: 02-001 STORET #: Lat/Long: 39.8904 183.0131 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR/SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: Check ONE (Or 2 & average). UNDERCUT BANKS [1], OVERHANGING VEGETATION [1], SHALLOW (IN SLOW WATER) [1], ROOTMATS [1]. POOLS > 70cm [2], ROOTWADS [1], BOULDERS [1]. OXBOWS, BACKWATERS [1], AQUATIC MACROPHYTES [1], LOGS OR WOODY DEBRIS [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION: NONE/LITTLE [3], MODERATE [2], HEAVY/SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1]. SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE [2], MOD. STABLE [1], UNSTABLE [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1].

6] GRADIENT (1.8 ft/mi) DRAINAGE AREA (1640 mi^2). VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st _____ cm
- 2nd _____ cm

C) RECREATION

AREA DEPTH

POOL: >100ft² >3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SCUMPS
- ISLANDS / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

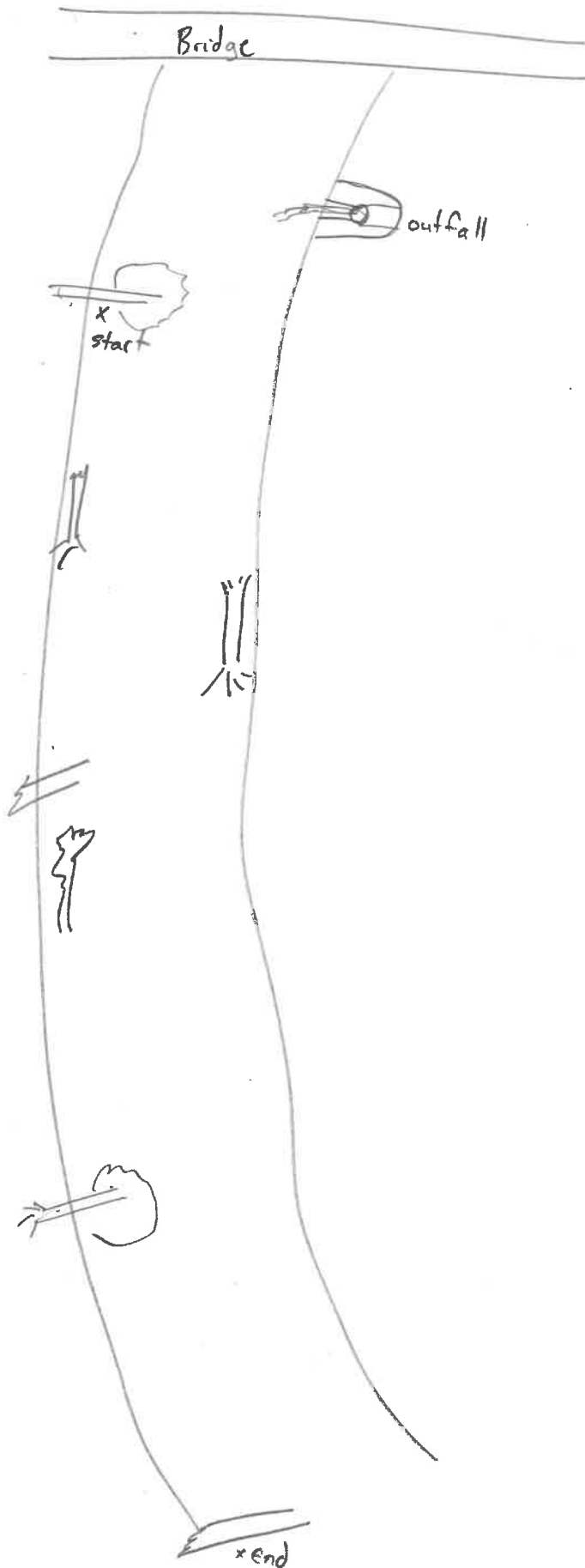
- WWTP / CSO / NPDES / INDUSTRY
- HARMED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dist 1-270

RM: 124.4 Date: 8/26/2020

SRID

Scorers Full Name & Affiliation: M43

River Code: 02-001- STORET #:

Lat./Long.: 39.5797 183.0184

Office verified location

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/>	BLDR /SLABS [10]	<input type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]	<input type="checkbox"/>	DETRITUS [3]	<input checked="" type="checkbox"/>	TILLS [1]	<input checked="" type="checkbox"/>	MODERATE [-1]
<input type="checkbox"/>	COBBLE [8]	<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>	WETLANDS [0]	<input type="checkbox"/>	NORMAL [0]
<input checked="" type="checkbox"/>	GRAVEL [7]	<input type="checkbox"/>	SILT [2]	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]
<input checked="" type="checkbox"/>	SAND [6]	<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>	SANDSTONE [0]	<input checked="" type="checkbox"/>	EXTENSIVE [-2]
<input type="checkbox"/>	BEDROCK [5]			<input type="checkbox"/>	RIP/RAP [0]	<input checked="" type="checkbox"/>	MODERATE [-1]
				<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]
				<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]
				<input type="checkbox"/>	COAL FINES [-2]		

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

		AMOUNT	
0	UNDERCUT BANKS [1]	3	POOLS > 70cm [2]
0	OVERHANGING VEGETATION [1]	1	ROOTWADS [1]
3	SHALLOWS (IN SLOW WATER) [1]	1	BOULDERS [1]
1	ROOTMATS [1]	1	OXBOWS, BACKWATERS [1]
		0	AQUATIC MACROPHYTES [1]
		2	LOGS OR WOODY DEBRIS [1]

Comments

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]		
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]		
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input checked="" type="checkbox"/> MINING / CONSTRUCTION [0]		
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]			
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]			

Comments

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	Primary Contact
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input checked="" type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input checked="" type="checkbox"/> EDDIES [1]	

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input checked="" type="checkbox"/> EXTENSIVE [-1]

Comments

6] **GRADIENT** (1.8 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1670 mi²)

%POOL: %GLIDE:

%RUN: %RIFFLE:

Comments

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st -sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%-CLOSED

- 1st _____ cm
- 2nd _____ cm

CJ RECREATION

AREA DEPTH
POOL: >100R2 >3ft

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

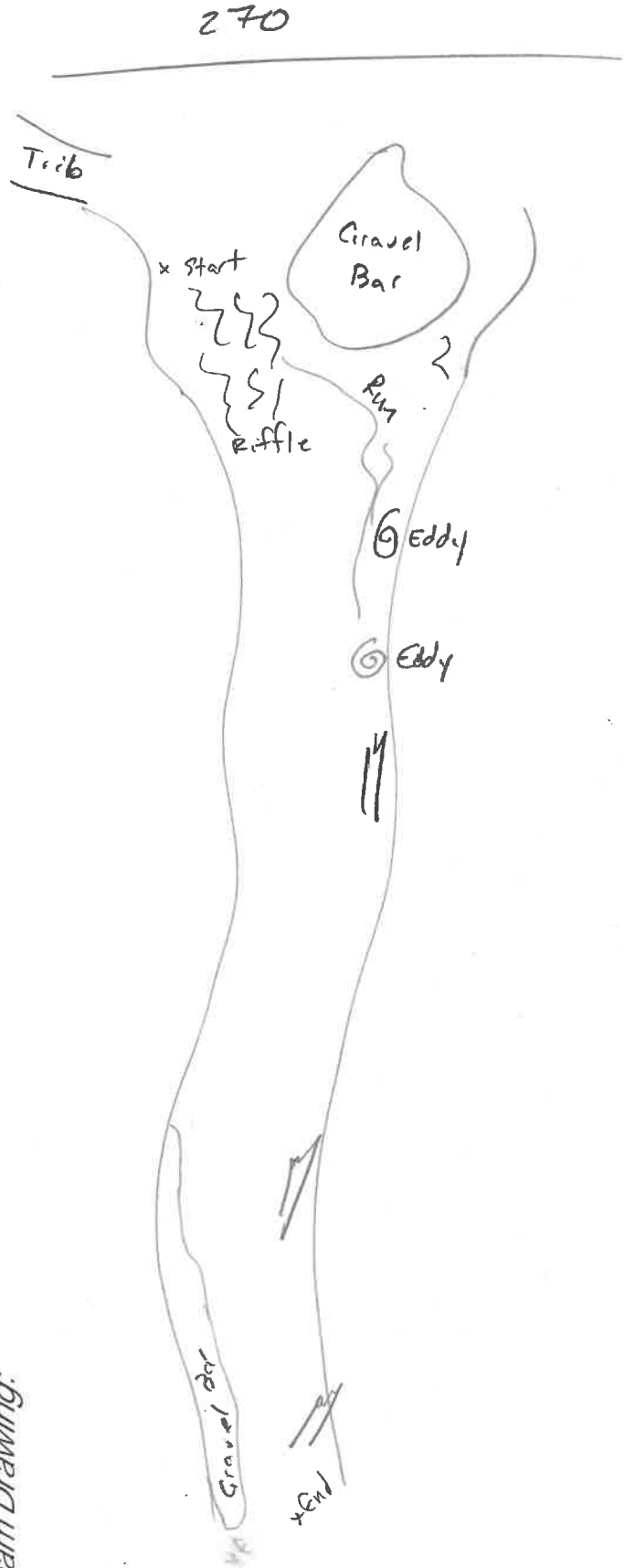
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQnSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Sisto River @ 665

RM: 120.1 Date: 9/01/2020

SR11

Scorers Full Name & Affiliation:

River Code: 02-001

STORET #:

Lat./Long.: 39.8334 183.0088

Office verified location

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE	OTHER TYPES		POOL RIFFLE	ORIGIN		QUALITY	
<input type="checkbox"/>	BLDR /SLABS [10]		<input type="checkbox"/>	HARDPAN [4]		<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]		<input type="checkbox"/>	DETRITUS [3]		<input checked="" type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]
<input checked="" type="checkbox"/>	COBBLE [8]		<input type="checkbox"/>	MUCK [2]		<input type="checkbox"/>	WETLANDS [0]	<input checked="" type="checkbox"/>	NORMAL [0]
<input type="checkbox"/>	GRAVEL [7]		<input type="checkbox"/>	SILT [2]		<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]
<input type="checkbox"/>	SAND [6]		<input type="checkbox"/>	ARTIFICIAL [0]		<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]
<input type="checkbox"/>	BEDROCK [5]					<input type="checkbox"/>	RIP/RAP [0]	<input type="checkbox"/>	MODERATE [-1]
(Score natural substrates; ignore sludge from point-sources)						<input type="checkbox"/>	LACUSTURINE [0]	<input checked="" type="checkbox"/>	NORMAL [0]
						<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]
						<input type="checkbox"/>	COAL FINES [-2]		

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<u>1</u>	UNDERCUT BANKS [1]	<u>2</u>	POOLS > 70cm [2]	<u>0</u>	OXBOWS, BACKWATERS [1]	<input checked="" type="checkbox"/>	EXTENSIVE >75% [11]
<u>2</u>	OVERHANGING VEGETATION [1]	<u>2</u>	ROOTWADS [1]	<u>0</u>	AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/>	MODERATE 25-75% [7]
<u>3</u>	SHALLOWS (IN SLOW WATER) [1]	<u>2</u>	BOULDERS [1]	<u>3</u>	LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/>	SPARSE 5-<25% [3]
<u>2</u>	ROOTMATS [1]					<input type="checkbox"/>	NEARLY ABSENT <5% [1]

Comments

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]		
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]		
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]		
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]			
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]			

Comments

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY)	Check ONE (Or 2 & average)	Check ALL that apply	Primary Contact
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> VERY FAST [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> INTERSTITIAL [-1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input checked="" type="checkbox"/> INTERMITTENT [-2]	
		<input checked="" type="checkbox"/> EDDIES [1]	

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average)

NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

6] **GRADIENT** (1.6 ft/mi) VERY LOW - LOW [2-4] %POOL: %GLIDE:

DRAINAGE AREA (1700 mi²) MODERATE [6-10] %RUN: %RIFFLE:

HIGH - VERY HIGH [10-6] Gradient Maximum 10

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st - sample pass - 2nd
- < 20 cm
- 20 - < 40 cm
- 40 - 70 cm
- > 70 cm / CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

C) RECREATION

AREA DEPTH

- POOL: > 100m² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SCUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

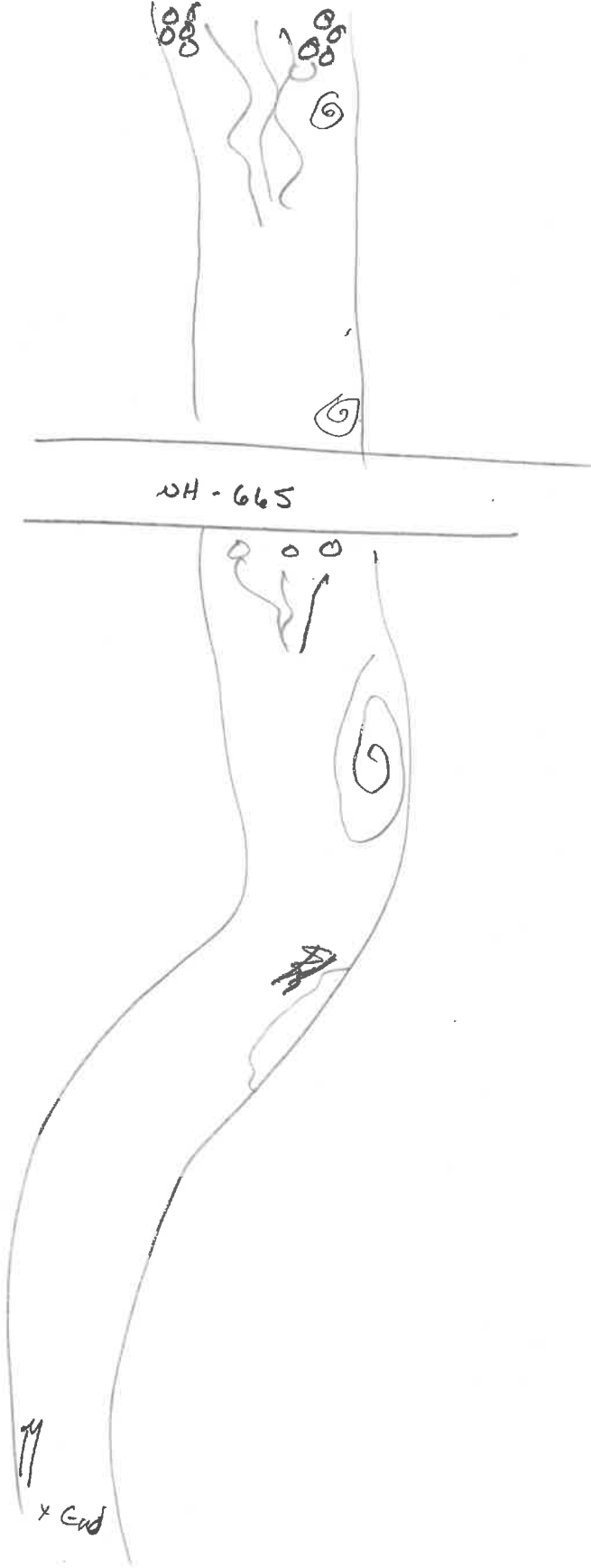
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Swaino River Dst. Southeastly LWTP *RM:* 118.0 *Date:* 9/10/2020
SR12 *Scorers Full Name & Affiliation:* MAS

River Code: 02-001 *STORET#:* _____ *Lat./Long. (NAD 83 - decimal):* 39.8092 183.0159 *Office verified location:*

1] SUBSTRATE Check ONLY Two substrate **TYPE BOXES**; estimate % or note every type present

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input checked="" type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2]	<input type="checkbox"/> 3 or less [0]			<input type="checkbox"/> LACUSTURINE [0]	<input checked="" type="checkbox"/> NORMAL [0]
<i>Comments</i>				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
				<input type="checkbox"/> COAL FINES [-2]	

Substrate 16
Maximum 20

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]	3 POOLS > 70cm [2]	1 OXBOWS, BACKWATERS [1]	AMOUNT
0 OVERHANGING VEGETATION [1]	1 ROOTWADS [1]	0 AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
3 SHALLOWS (IN SLOW WATER) [1]	1 BOULDERS [1]	3 LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
1 ROOTMATS [1]			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments

Cover 16
Maximum 20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel 14
Maximum 20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY	CONSERVATION TILLAGE
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input checked="" type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

Comments

Riparian 5
Maximum 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	<i>Primary Contact</i>
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<i>Secondary Contact</i>
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input checked="" type="checkbox"/> EDDIES [1]	

Comments

Pool / Current 10
Maximum 12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input checked="" type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

Riffle / Run 5
Maximum 8

6] GRADIENT (1.6 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (1710 mi²)

% POOL: 8 **% GLIDE:** 8

% RUN: 8 **% RIFFLE:** 8

Gradient 10
Maximum 10

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

1st sample pass-- 2nd

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH

POOL: >100ft >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSO/SISOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCLOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

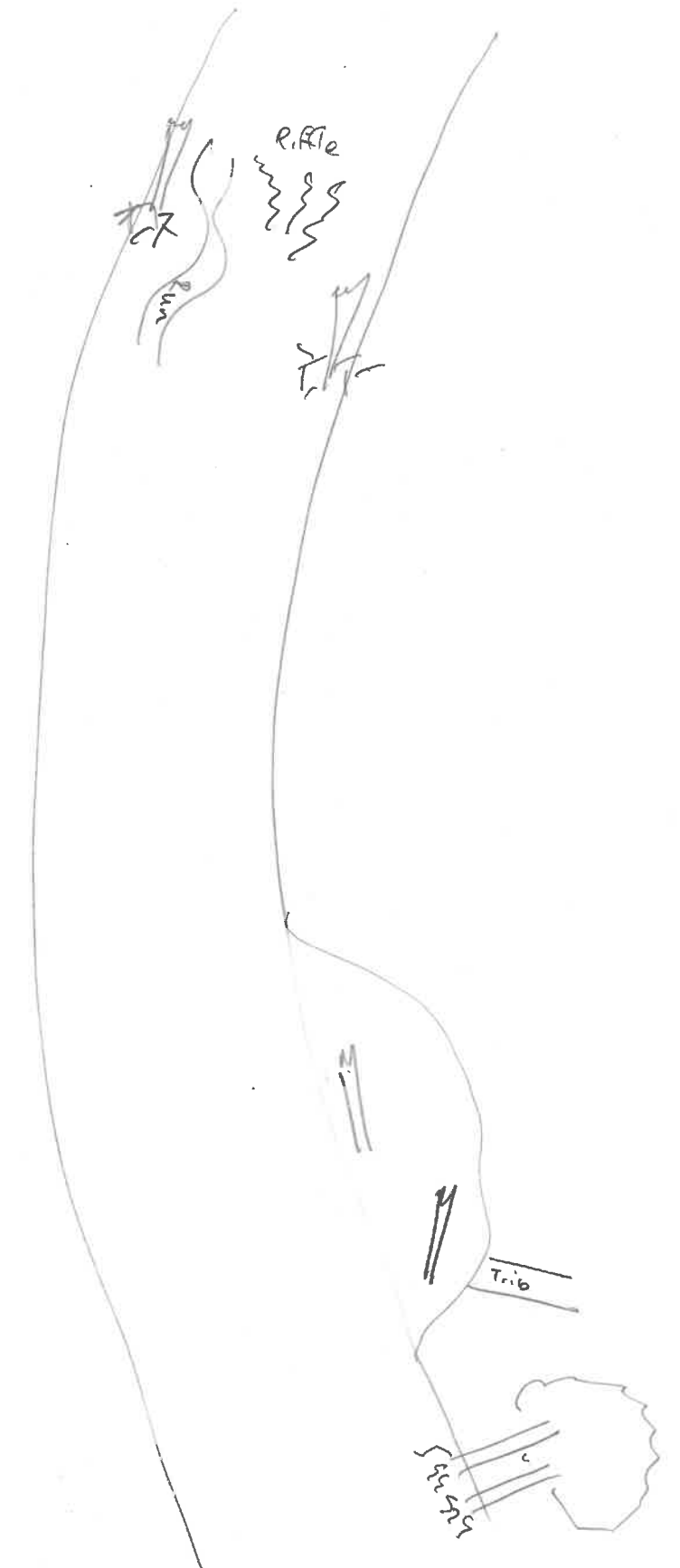
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQNS-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- width
- depth
- max. depth
- bankfull width
- bankfull depth
- W/D ratio
- bankfull max. depth
- floodprone x² width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Det Big Walnut Cr. RM: 117.15 Date: 9/01/2020

River Code: 02-00 STORET#: _____ Lat./Long.: 39.7992 183.0104 Office verified location

Scorers Full Name & Affiliation: MAS

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/>	BLDR /SLABS [10]	<input type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]	<input type="checkbox"/>	DETRITUS [3]	<input checked="" type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]
<input type="checkbox"/>	COBBLE [8]	<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>	WETLANDS [0]	<input checked="" type="checkbox"/>	NORMAL [0]
<input checked="" type="checkbox"/>	GRAVEL [7]	<input type="checkbox"/>	SILT [2]	<input type="checkbox"/>	HARDPAN [0]	<input checked="" type="checkbox"/>	FREE [1]
<input checked="" type="checkbox"/>	SAND [6]	<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]
<input type="checkbox"/>	BEDROCK [5]	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/>	RIP/RAP [0]	<input type="checkbox"/>	MODERATE [-1]
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]				<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]
<i>Comments</i>				<input type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]
				<input type="checkbox"/>	COAL FINES [-2]		

Substrate Maximum 20 16

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>1</u>	UNDERCUT BANKS [1]	<u>3</u>	POOLS > 70cm [2]	<u>0</u>	OXBOWS, BACKWATERS [1]	<input checked="" type="checkbox"/>	EXTENSIVE >75% [11]
<u>3</u>	OVERHANGING VEGETATION [1]	<u>1</u>	ROOTWADS [1]	<u>0</u>	AQUATIC MACROPHYTES [1]	<input type="checkbox"/>	MODERATE 25-75% [7]
<u>3</u>	SHALLOWS (IN SLOW WATER) [1]	<u>1</u>	BOULDERS [1]	<u>3</u>	LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/>	SPARSE 5-<25% [3]
<u>1</u>	ROOTMATS [1]					<input type="checkbox"/>	NEARLY ABSENT <5% [1]

Cover Maximum 20 16

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

<input checked="" type="checkbox"/>	HIGH [4]	<input checked="" type="checkbox"/>	EXCELLENT [7]	<input checked="" type="checkbox"/>	NONE [6]	<input type="checkbox"/>	HIGH [3]
<input checked="" type="checkbox"/>	MODERATE [3]	<input checked="" type="checkbox"/>	GOOD [5]	<input type="checkbox"/>	RECOVERED [4]	<input checked="" type="checkbox"/>	MODERATE [2]
<input type="checkbox"/>	LOW [2]	<input checked="" type="checkbox"/>	FAIR [3]	<input type="checkbox"/>	RECOVERING [3]	<input type="checkbox"/>	LOW [1]
<input type="checkbox"/>	NONE [1]	<input type="checkbox"/>	POOR [1]	<input type="checkbox"/>	RECENT OR NO RECOVERY [1]		

Channel Maximum 20 15

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

<input checked="" type="checkbox"/>	NONE / LITTLE [3]	<input checked="" type="checkbox"/>	WIDE > 50m [4]	<input checked="" type="checkbox"/>	FOREST, SWAMP [3]	<input type="checkbox"/>	CONSERVATION TILLAGE [1]
<input checked="" type="checkbox"/>	MODERATE [2]	<input type="checkbox"/>	MODERATE 10-50m [3]	<input type="checkbox"/>	SHRUB OR OLD FIELD [2]	<input type="checkbox"/>	URBAN OR INDUSTRIAL [0]
<input checked="" type="checkbox"/>	HEAVY / SEVERE [1]	<input type="checkbox"/>	NARROW 5-10m [2]	<input type="checkbox"/>	RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/>	MINING / CONSTRUCTION [0]
		<input type="checkbox"/>	VERY NARROW < 5m [1]	<input type="checkbox"/>	FENCED PASTURE [1]	Indicate predominant land use(s) past 100m riparian.	
		<input type="checkbox"/>	NONE [0]	<input type="checkbox"/>	OPEN PASTURE, ROWCROP [0]	Riparian Maximum 10 8.25	

Riparian Maximum 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

<input checked="" type="checkbox"/>	> 1m [6]	<input type="checkbox"/>	POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/>	TORRENTIAL [-1]	<input checked="" type="checkbox"/>	SLOW [1]
<input type="checkbox"/>	0.7-1m [4]	<input type="checkbox"/>	POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/>	VERY FAST [1]	<input type="checkbox"/>	INTERSTITIAL [-1]
<input type="checkbox"/>	0.4-0.7m [2]	<input checked="" type="checkbox"/>	POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/>	FAST [1]	<input type="checkbox"/>	INTERMITTENT [-2]
<input type="checkbox"/>	0.2-0.4m [1]			<input type="checkbox"/>	MODERATE [1]	<input type="checkbox"/>	EDDIES [1]
<input type="checkbox"/>	< 0.2m [0]			Indicate for reach - pools and riffles.			

Pool / Current Maximum 12 1

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

<input type="checkbox"/>	BEST AREAS > 10cm [2]	<input type="checkbox"/>	MAXIMUM > 50cm [2]	<input type="checkbox"/>	STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/>	NONE [2]
<input type="checkbox"/>	BEST AREAS 5-10cm [1]	<input type="checkbox"/>	MAXIMUM < 50cm [1]	<input type="checkbox"/>	MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/>	LOW [1]
<input checked="" type="checkbox"/>	BEST AREAS < 5cm [metric=0]			<input type="checkbox"/>	UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/>	MODERATE [0]
						<input type="checkbox"/>	EXTENSIVE [-1]

Riffle / Run Maximum 8 0

6] GRADIENT (1.7 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (2260 mi²)

% POOL: 8 % GLIDE: 8

% RUN: 8 % RIFFLE: 8

Gradient Maximum 10 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

meters

CANOPY

- 85%-OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%-CLOSED

CJ RECREATION

AREA DEPTH POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

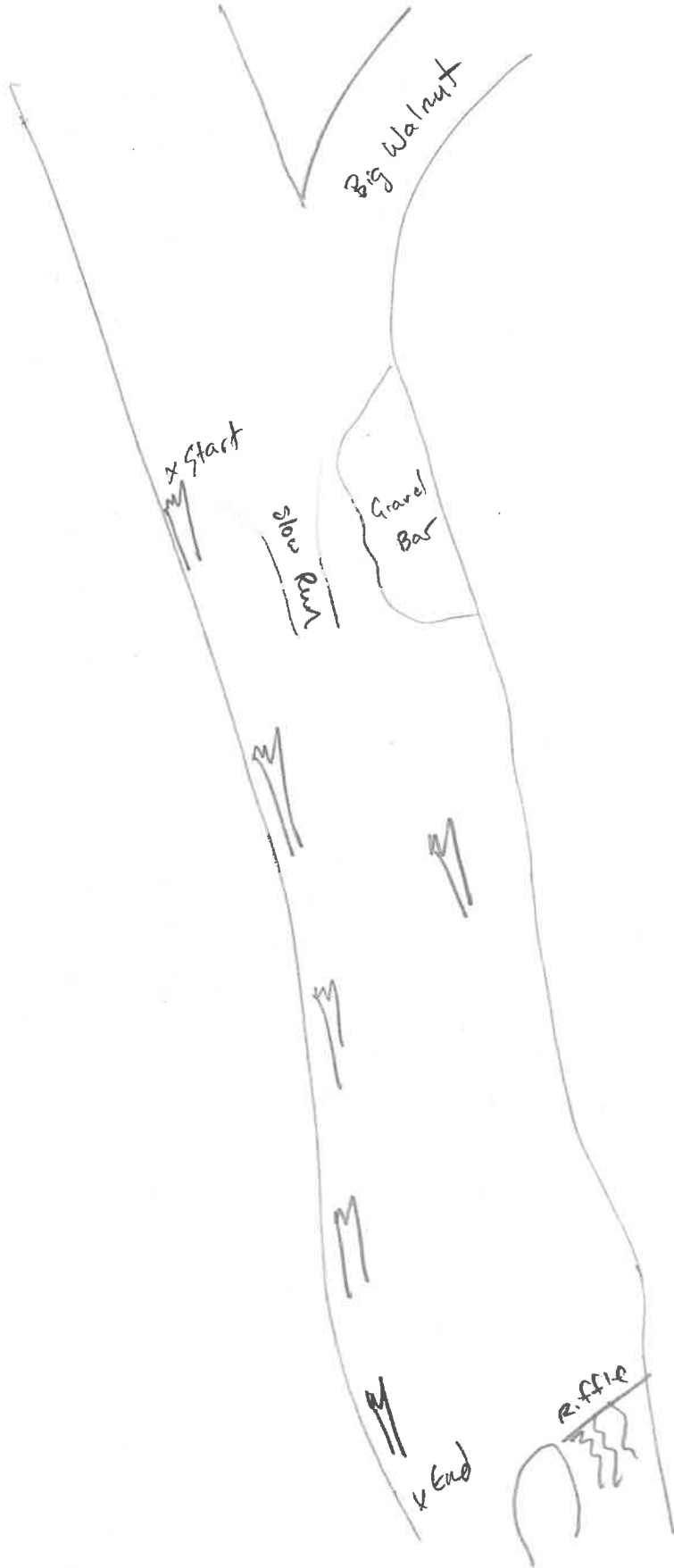
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 88

Stream & Location: Scioto River D.L. Pickaway Power Plant RM: 116.0 Date: 9/01/2020

SE14 Scorers Full Name & Affiliation:

River Code: -02-001 STORET #: _____ Lat./Long: 39.7841 183.0101 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]	_____	<input type="checkbox"/> HARDPAN [4]	_____	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	_____	<input type="checkbox"/> DETRITUS [3]	_____	<input checked="" type="checkbox"/> SILT [1]	<input type="checkbox"/> MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	_____	<input type="checkbox"/> MUCK [2]	_____	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	_____	<input type="checkbox"/> SILT [2]	_____	<input type="checkbox"/> HARDPAN [0]	<input checked="" type="checkbox"/> FREE [1]
<input type="checkbox"/> SAND [6]	_____	<input type="checkbox"/> ARTIFICIAL [0]	_____	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	_____			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments _____

Substrate Maximum 18 20

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools. Check ONE (Or 2 & average)

AMOUNT
<input type="checkbox"/> EXTENSIVE >75% [11]
<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> NEARLY ABSENT <5% [1]

<u>0</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70cm [2]	<u>3</u> OXBOWS, BACKWATERS [1]
<u>0</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<u>0</u> AQUATIC MACROPHYTES [1]
<u>3</u> SHALLOWS (IN SLOW WATER) [1]	<u>2</u> BOULDERS [1]	<u>3</u> LOGS OR WOODY DEBRIS [1]
<u>1</u> ROOTMATS [1]		

Comments _____

Cover Maximum 15 20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

Channel Maximum 10 20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments _____

Riparian Maximum 10 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	11
<input type="checkbox"/> 0.7-1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.4-0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> 0.2-0.4m [1]		<input type="checkbox"/> MODERATE [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> SLOW [1]	

Indicate for reach - pools and riffles.

Comments _____

Pool / Current Maximum 12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average) NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments _____

Riffle / Run Maximum 8 8

6] GRADIENT (1.7 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (2270 mi²)

% POOL: 8 % GLIDE: 8

% RUN: 8 % RIFFLE: 8

Comments _____

Gradient Maximum 10 10

A) SAMPLED REACH

Check ALL that apply

METHOD

BOAT

WADE

L. LINE

OTHER

STAGE

1st-sample pass-- 2nd

HIGH

UP

NORMAL

LOW

DRY

DISTANCE

0.5 Km

0.2 Km

0.15 Km

0.12 Km

OTHER

CLARITY

1st-sample pass-- 2nd

<20 cm

20-<40 cm

40-70 cm

>70 cm/ CTB

SECCHI DEPTH

meters

CANOPY

>85%- OPEN

55%-<85%

30%-<55%

10%-<30%

<10%- CLOSED

BIAESTHETICS

NUISANCE ALGAE

INVASIVE MACROPHYTES

EXCESS TURBIDITY

DISCOLORATION

FOAM / SGUM

OIL SHEEN

TRASH / LITTER

NUISANCE ODOR

SLUDGE DEPOSITS

CSOs/SSOs/OUTFALLS

POOL: >100m² >3ft

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMoured / SLOUMPS

ISLANDS / SCUMPS

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

E) ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT & GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

\bar{x} width

\bar{x} depth

max. depth

\bar{x} bankfull width

bankfull \bar{x} depth

W/D ratio

bankfull max. depth

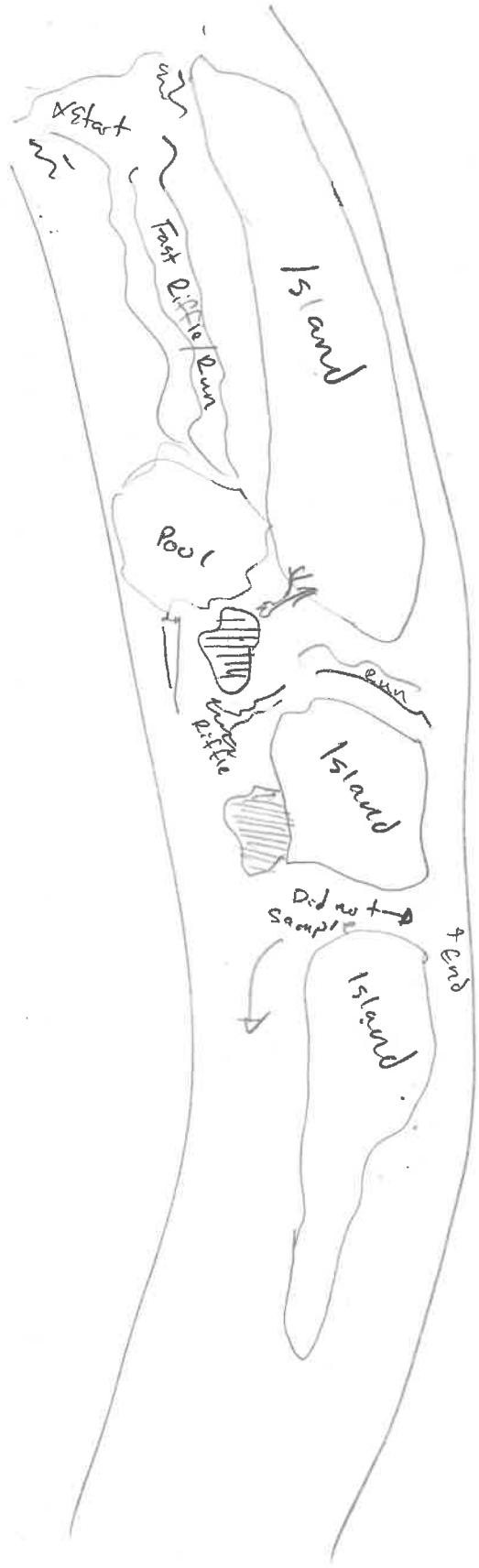
floodprone \bar{x}^2 width

entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



Stream & Location: Scioto River Post 762 SR15

RM: 114.0 Date: 9/16/2020

River Code: 02-001-STORET# Lat/Long: 18 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a circled score of 18.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a circled score of 16.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a circled score of 19.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a circled score of 15.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes a Recreation Potential box and a circled score of 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a circled score of 7.5.

6] GRADIENT (1.7 ft/mi) DRAINAGE AREA (2280 mi^2). Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a circled score of 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
 - 20-40 cm
 - 40-70 cm
 - > 70 cm/ CTB
 - SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st _____ cm
- 2nd _____ cm

CJ RECREATION

AREA DEPTH

- >100ft²
- >3ft

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

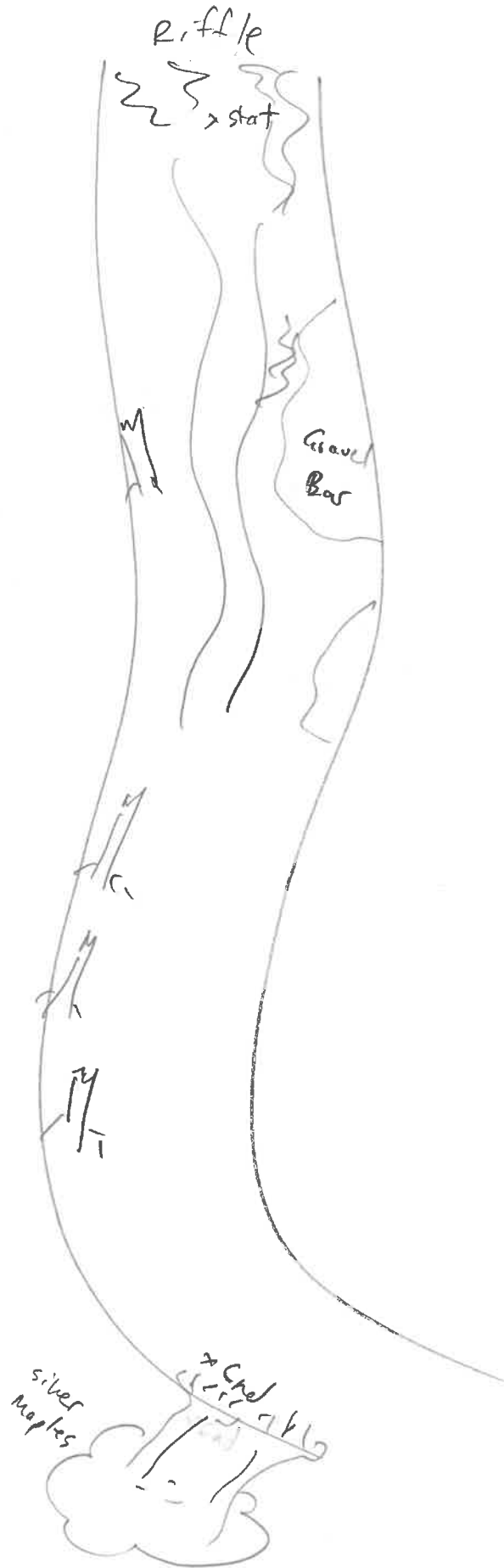
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Dst 316 SR16

RM: 109.35 Date: 9/16/2020

River Code: 02-001 STORET#:

Scorers Full Name & Affiliation: MAS -> MBI

Lat/Long: 39.71957 183.01269

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment section with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes checkboxes for various substrate types and a score box for 16.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment section with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score box for 13.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment section with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, and STABILITY. Includes checkboxes and a score box for 20.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment section with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, and CONSERVATION TILLAGE. Includes checkboxes and a score box for 15.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment section with categories: MAXIMUM DEPTH, CHANNEL WIDTH, and CURRENT VELOCITY. Includes checkboxes and a score box for 12.

Recreation Potential Primary Contact Secondary Contact

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Riffle and Run Quality assessment section with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, and RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score box for 6.5.

6] GRADIENT (1.0 ft/mi)

DRAINAGE AREA (2310 mi2)

Gradient and Drainage Area assessment section with checkboxes for VERY LOW - LOW, MODERATE, and HIGH - VERY HIGH.

Pool, Glide, Run, and Riffle percentage assessment section with input boxes for % POOL, % GLIDE, % RUN, and % RIFFLE.

Gradient Maximum 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st-sample pass-- 2nd
- HIGH
- ~~TUP~~
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm
 2nd _____ cm

CJ RECREATION

AREA DEPTH
 POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

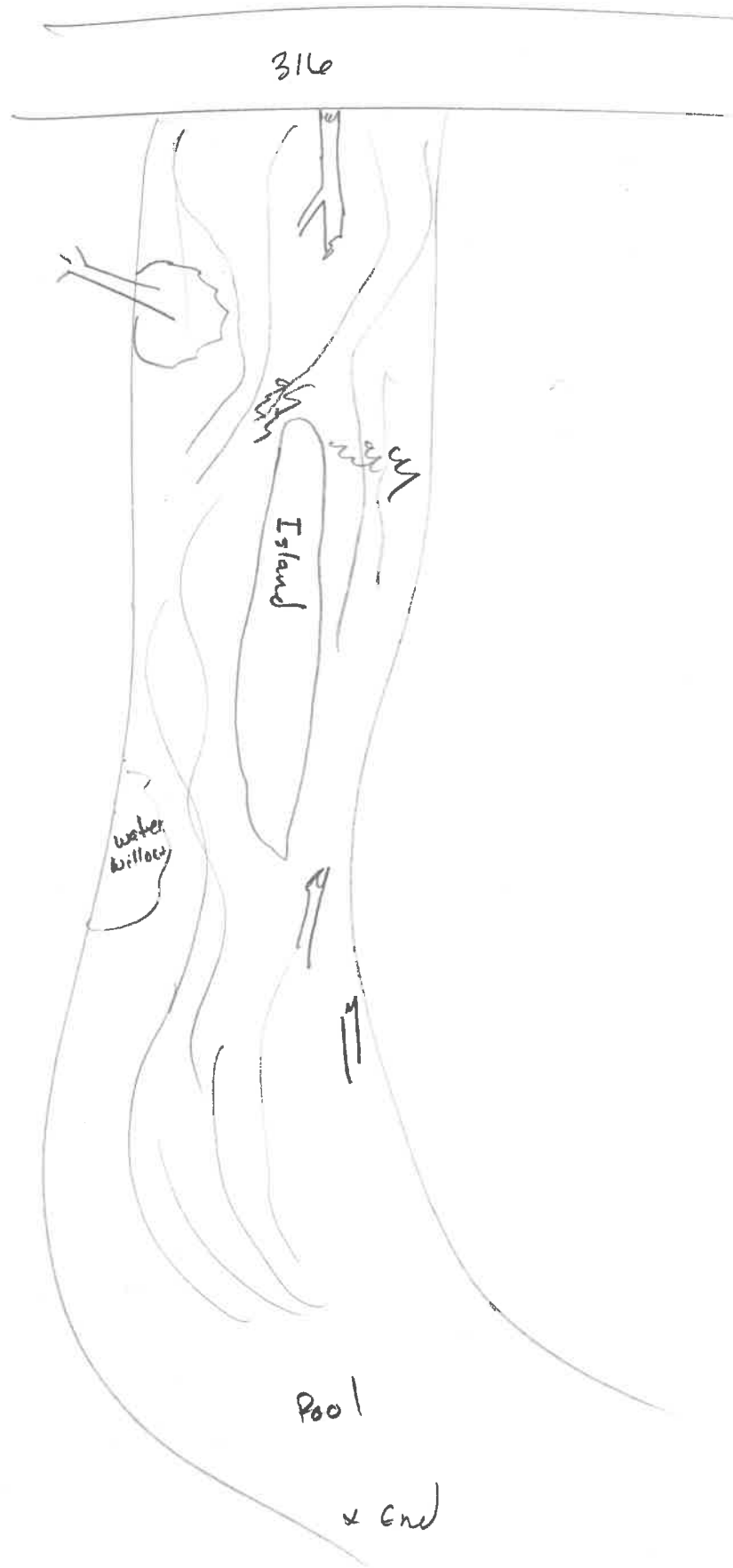
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River ust Walnut Creek

RM: 107.5 Date: 9/16/2020

SR17

Scorers Full Name & Affiliation:

River Code: 02-001 - STORET #:

Lat./Long.: 39.69640 183.00313

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

Amount assessment grid with categories: EXTENSIVE >75%, MODERATE 25-75%, SPARSE 5-25%, NEARLY ABSENT <5%.

Comments

Cover Maximum 20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY.

Comments

Channel Maximum 20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

Comments

Riparian Maximum 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY.

Comments

Recreation Potential Primary Contact Secondary Contact

Pool / Current Maximum 12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle / Run Quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS.

Comments

Riffle / Run Maximum 8

6] GRADIENT (1.0 ft/mi) DRAINAGE AREA (2320 mi2) VERY LOW - LOW, MODERATE, HIGH - VERY HIGH.

%POOL, %GLIDE, %RUN, %RIFFLE.

Gradient Maximum 10

AJ SAMPLED REACH

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

STAGE

- HIGH
- UP
- NORMAL
- LOW
- DRY

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st _____ cm
- 2nd _____ cm

CJ RECREATION

POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

OHEI Score: **83.75**

Stream & Location: Scioto River det Walnut Creek
SR18

RM: 105.25 Date: 9/16/2020

River Code: 02-001- STORET#: _____

Scorers Full Name & Affiliation: MAS MBI

Lat./Long.: _____
(NAD 83 - decimal)

18

Office verified location

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE
<input type="checkbox"/> BLDR /SLABS [10]	_____	<input type="checkbox"/> HARDPAN [4]	_____
<input type="checkbox"/> BOULDER [9]	_____	<input type="checkbox"/> DETRITUS [3]	_____
<input type="checkbox"/> COBBLE [8]	_____	<input type="checkbox"/> MUCK [2]	_____
<input checked="" type="checkbox"/> GRAVEL [7]	_____	<input type="checkbox"/> SILT [2]	_____
<input checked="" type="checkbox"/> SAND [6]	_____	<input type="checkbox"/> ARTIFICIAL [0]	_____
<input type="checkbox"/> BEDROCK [5]	_____	(Score natural substrates; ignore sludge from point-sources)	

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

ORIGIN	QUALITY
<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input checked="" type="checkbox"/> FILLS [1]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> LACUSTURINE [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
<input type="checkbox"/> COAL FINES [-2]	

SILT

EMBEDDEDNESS

Substrate
16
Maximum
20

Comments _____

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<input type="0"/> UNDERCUT BANKS [1]	<input type="3"/> POOLS > 70cm [2]	<input type="1"/> OXBOWS, BACKWATERS [1]
<input type="0"/> OVERHANGING VEGETATION [1]	<input type="0"/> ROOTWADS [1]	<input type="0"/> AQUATIC MACROPHYTES [1]
<input type="3"/> SHALLOWS (IN SLOW WATER) [1]	<input type="1"/> BOULDERS [1]	<input type="3"/> LOGS OR WOODY DEBRIS [1]
<input type="0"/> ROOTMATS [1]		

<input type="checkbox"/> EXTENSIVE >75% [11]
<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> NEARLY ABSENT <5% [1]

Cover
Maximum
20
13

Comments _____

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Channel
Maximum
20
19.5

Comments _____

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)
River right looking downstream

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]
		<input type="checkbox"/> CONSERVATION TILLAGE [1]
		<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
		<input type="checkbox"/> MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10
9.25

Comments _____

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]
		<input checked="" type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input checked="" type="checkbox"/> EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current
Maximum
12
12

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Riffle / Run
Maximum
8
6

Comments _____

6] **GRADIENT** (1.0 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]
DRAINAGE AREA (2610 mi²)

%POOL: %GLIDE:
%RUN: %RIFFLE:

Gradient
Maximum
10
8

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. -sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st. _____ cm
- 2nd _____ cm

CJ RECREATION

- AREA _____
- DEPTH _____
- POOL: >100R? >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCLOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: **85.25**

Stream & Location: Scioto R. Dist Commercial Point Rd RM: 102.0 Date: 9/16/2020
SRID

River Code: 02-001- STORET #: _____ Lat./Long.: 39.63695 182.96444 Office verified location

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	SILT	<input type="checkbox"/> HEAVY [-2]	Substrate
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input checked="" type="checkbox"/> TILLS [1]		<input type="checkbox"/> MODERATE [-1]	
<input checked="" type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> WETLANDS [0]	EMBEDDEDNESS	<input checked="" type="checkbox"/> NORMAL [0]	Maximum 20
<input checked="" type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]		<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> BEDROCK [5]				<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> NORMAL [0]	<input type="checkbox"/> NONE [1]	

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments _____

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> AMOUNT
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<input type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input checked="" type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

Comments _____

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<input checked="" type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERMITTENT [-2]
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	<input checked="" type="checkbox"/> EDDIES [1]
<input type="checkbox"/> < 0.2m [0]			

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average) NO RIFFLE [metric=0]

<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments _____

6] **GRADIENT** (1.0 ft/mi) VERY LOW - LOW [2-4] %POOL: %GLIDE:
DRAINAGE AREA (2640 mi²) MODERATE [6-10] %RUN: %RIFFLE:
 HIGH - VERY HIGH [10-6] Gradient Maximum 10

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- < 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- ≥ 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH POOL: >100ft >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPED
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

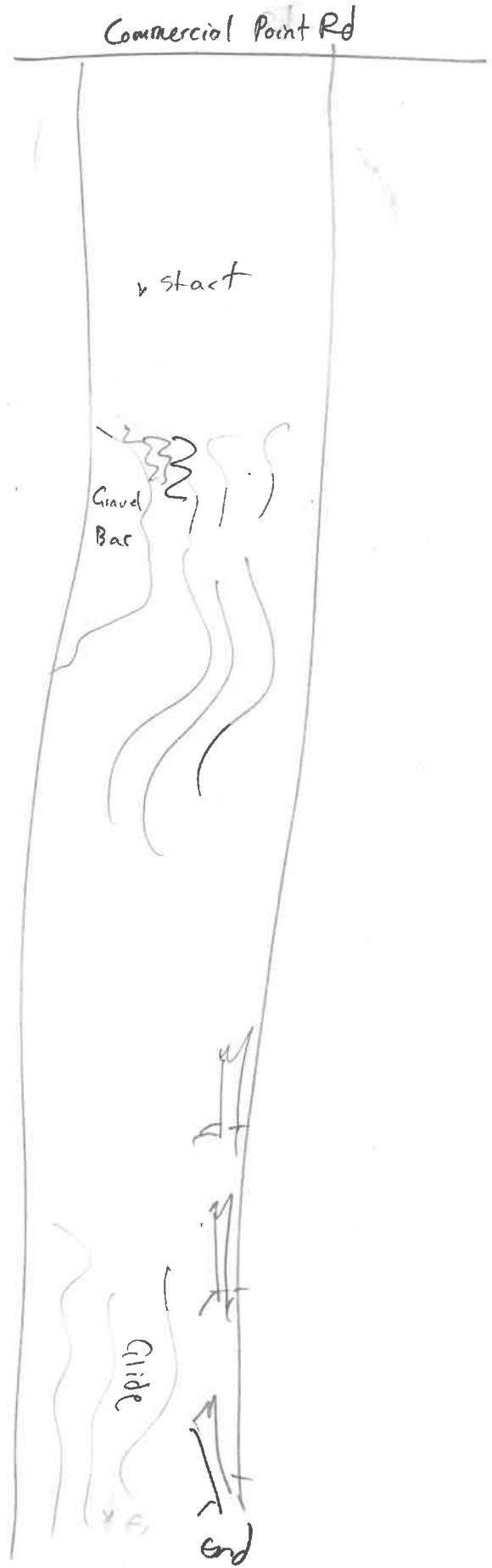
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQNSSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River U.S. 72

RM: 100.24 Date: 8/31/2020

SL2W Scorers Full Name & Affiliation:

River Code: 02-001- STORET #: Lat./Long.: 39.6076 182.9577 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for various substrate types and a score box for 18.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score box for 16.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a score box for 19.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes checkboxes and a score box for 17.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes checkboxes and a score box for 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle / Run Quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score box for 1.

6] GRADIENT (1.7 ft/mi) DRAINAGE AREA (3200 mi^2) assessment grid with categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes checkboxes and a score box for 10.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- HIGH
- UP
- NORMAL
- LOW
- DRY

1st--sample pass-- 2nd

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm

2nd _____ cm

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

CJ RECREATION

AREA DEPTH

POOL: > 100ft² > 3ft

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

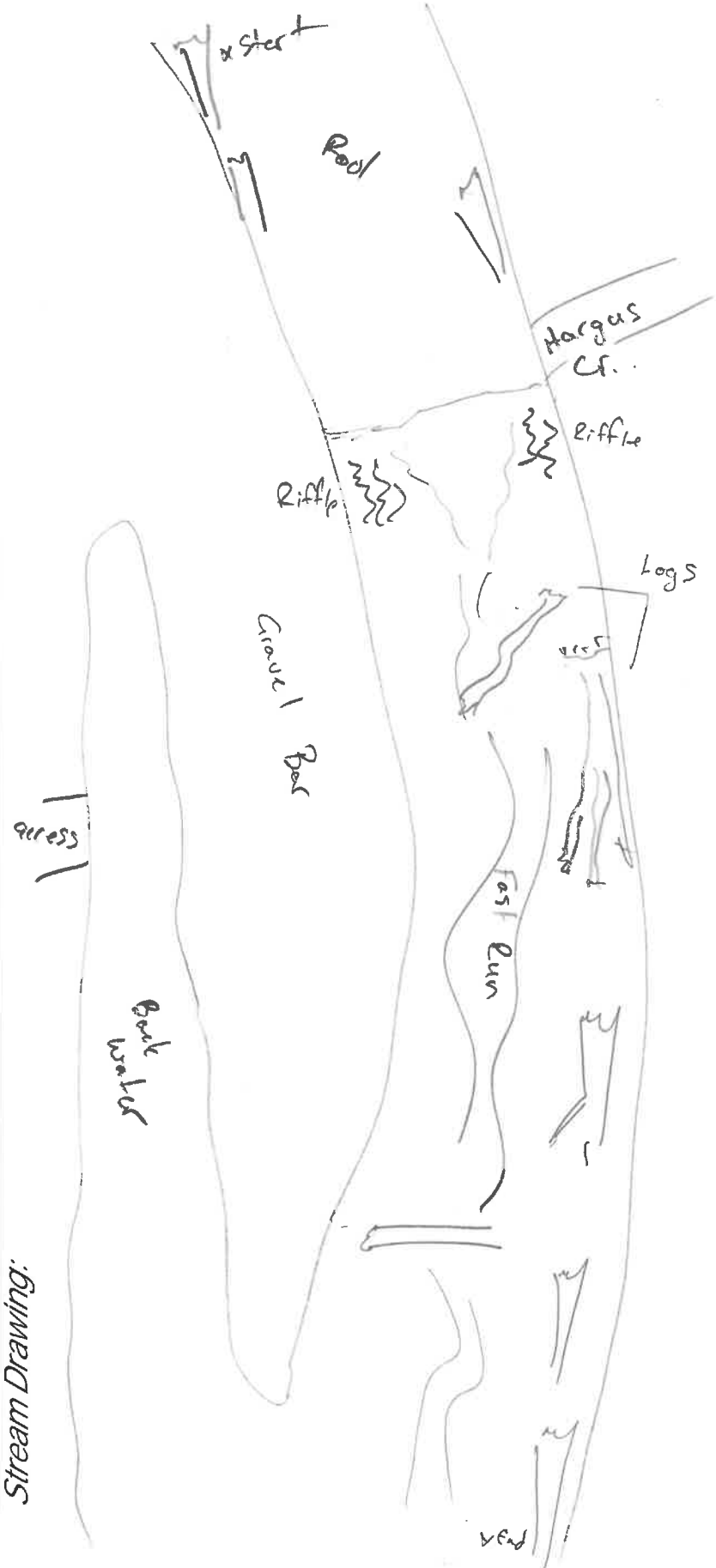
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto River Just Circleville WWTP RM: 99.52 Date: 8/31/2020

SR 21 Scorers Full Name & Affiliation: _____
 River Code: 02-001 STORET #: _____ Lat./Long. 39.5977 182.9559 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	Substrate 18 Maximum 20
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments _____

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools. Check ONE (Or 2 & average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> AMOUNT
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input checked="" type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10

Comments _____

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	

Indicate for reach - pools and riffles. Pool / Current Maximum 12

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments _____

6] GRADIENT (1.7 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (3220 mi²) % POOL: % GLIDE:
 % RUN: % RIFFLE:

Gradient Maximum 10

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st-sample pass-- 2nd
 - HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

C) RECREATION

AREA DEPTH
POOL: >100R? >3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

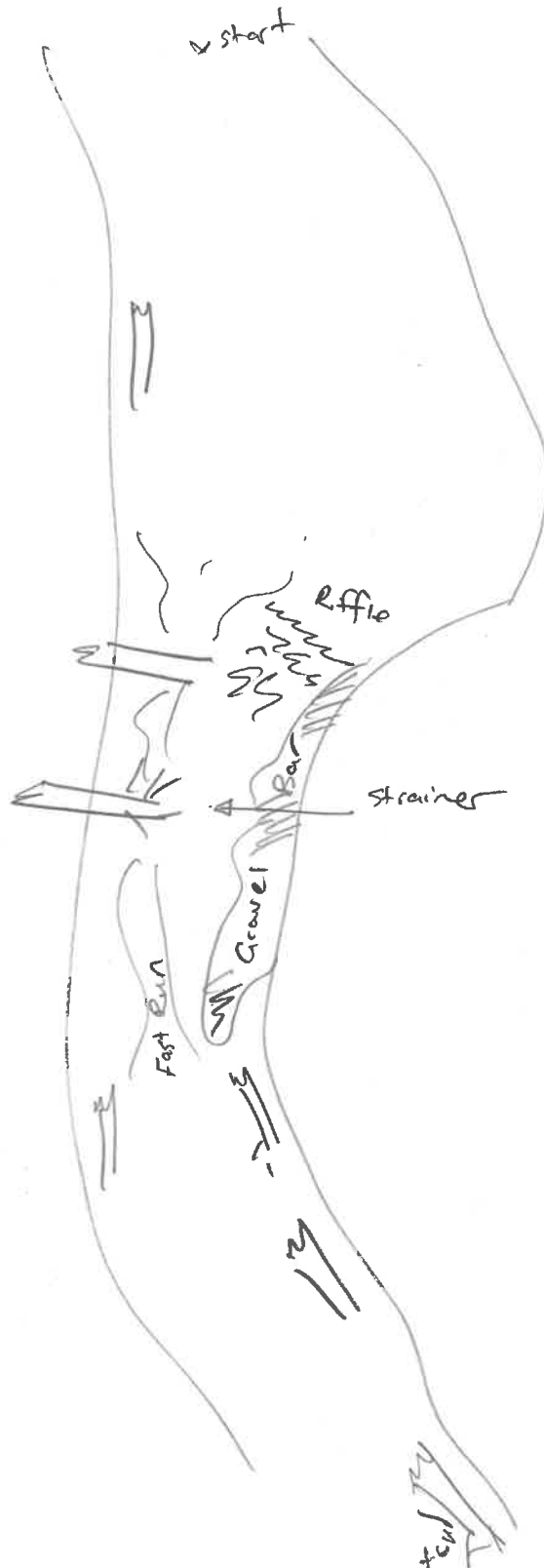
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Scioto Rvr Dst Circleville WWTP SR22 RM: 98.65 Date: 8/3/2020

River Code: 02-001 STORET#: Lat/Long: 39.5986 182.9706 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a 'Substrate' score box with value 14.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a 'Cover' score box with value 10.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a 'Channel' score box with value 13.5.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a 'Riparian' score box with value 5.25.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, and Recreation Potential. Includes a 'Pool / Current' score box with value 10.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' score box with value 0.

6] GRADIENT (1.7 ft/mi) DRAINAGE AREA (3220 mi^2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a 'Gradient' score box with value 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

BOAT WADE L. LINE OTHER

STAGE

1st--sample pass-- 2nd

HIGH UP NORMAL LOW DRY

DISTANCE

0.5 Km 0.2 Km 0.15 Km 0.12 Km OTHER

CLARITY

1st--sample pass-- 2nd

< 20 cm 20-<40 cm 40-70 cm > 70 cm/ CTB SECCHI DEPTH

meters

CANOPY

> 85%- OPEN 55%-<85% 30%-<55% 10%-<30% <10%- CLOSED

BI/AESTHETICS

NUISANCE ALGAE INVASIVE MACROPHYTES EXCESS TURBIDITY DISCOLORATION FOAM / SCUM OIL SHEEN TRASH / LITTER NUISANCE ODOR SLUDGE DEPOSITS CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

PUBLIC / PRIVATE / BOTH / NA

ACTIVE / HISTORIC / BOTH / NA

YOUNG-SUCCESSION-OLD

SPRAY / SNAG / REMOVED

MODIFIED / DIPPED OUT / NA

LEVEED / ONE SIDED

RELOCATED / CUTOFFS

MOVING-BEDLOAD-STABLE

ARMoured / SLUMPS

ISLANDS / SCoured

IMPOUNDED / DESICCATED

FLOOD CONTROL / DRAINAGE

EJ ISSUES

WWTP / CSO / NPDES / INDUSTRY

HARDENED / URBAN / DIRT&GRIME

CONTAMINATED / LANDFILL

BMPs-CONSTRUCTION-SEDIMENT

LOGGING / IRRIGATION / COOLING

BANK / EROSION / SURFACE

FALSE BANK / MANURE / LAGOON

WASH H₂O / TILE / H₂O TABLE

ACID / MINE / QUARRY / FLOW

NATURAL / WETLAND / STAGNANT

PARK / GOLF / LAWN / HOME

ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

\bar{x} width

\bar{x} depth

max. depth

\bar{x} bankfull width

bankfull \bar{x} depth

W/D ratio

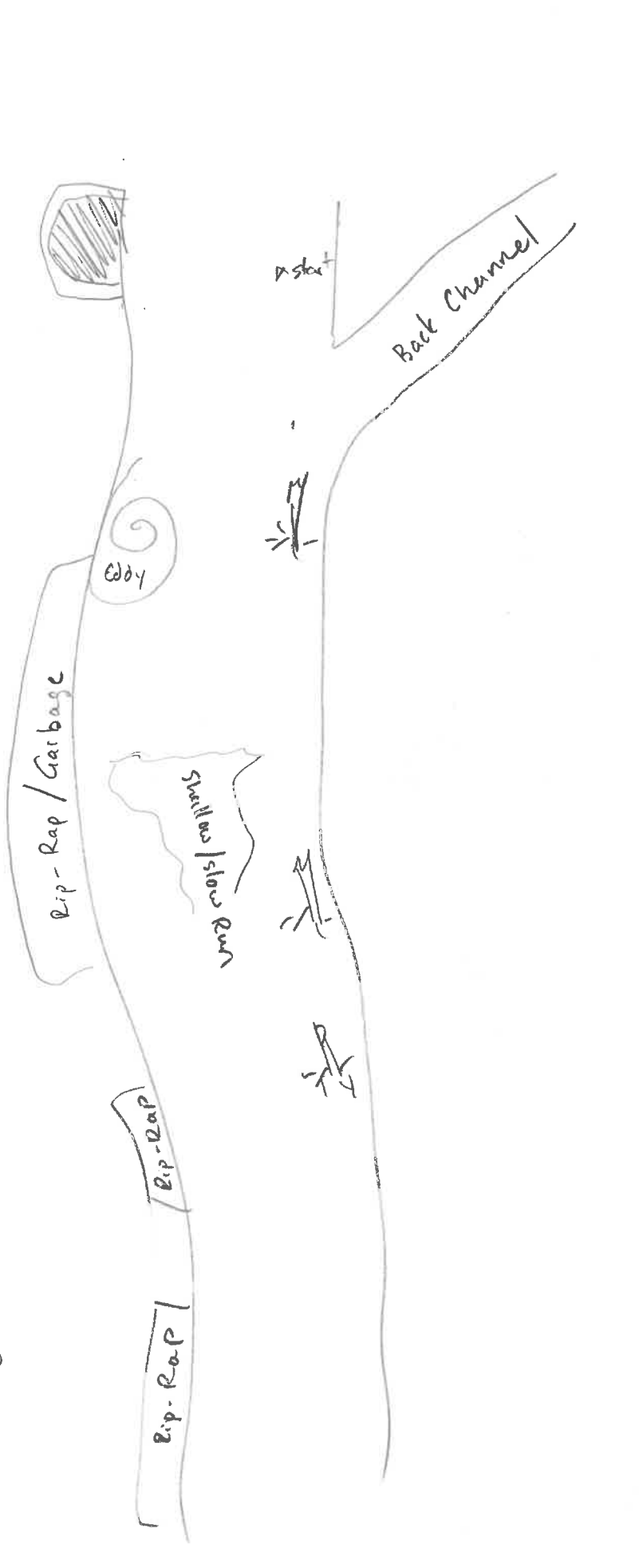
bankfull max. depth

floodprone \bar{x}^2 width

entrench. ratio

Legacy Tree:

Circle some & COMMENT



Stream Drawing:

Stream & Location: Scioto River

RM: 98.01 Date: 8/31/2020

S223 dst. Wickett dam

Scorers Full Name & Affiliation: MAS

River Code: 02-001- STORET#:

Lat./Long.: 39.5897 182.9715

Office verified location

1) **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]	
<input checked="" type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]	
<input checked="" type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]	
<input type="checkbox"/> BEDROCK [5]			

ORIGIN

LIMESTONE [1]

TILLS [1]

WETLANDS [0]

HARDPAN [0]

SANDSTONE [0]

RIP/RAP [0]

LACUSTURINE [0]

SHALE [-1]

COAL FINES [-2]

QUALITY

HEAVY [-2]

MODERATE [-1]

NORMAL [0]

FREE [1]

EXTENSIVE [-2]

MODERATE [-1]

NORMAL [0]

NONE [1]

Substrate
Maximum 20
18

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2) **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large-diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

1 UNDERCUT BANKS [1]

0 OVERHANGING VEGETATION [1]

2 SHALLOWS (IN SLOW WATER) [1]

1 ROOTMATS [1]

3 POOLS > 70cm [2]

1 ROOTWADS [1]

1 BOULDERS [1]

1 OXBOWS, BACKWATERS [1]

1 AQUATIC MACROPHYTES [1]

1 LOGS OR WOODY DEBRIS [1]

EXTENSIVE >75% [11]

MODERATE 25-75% [7]

SPARSE 5-<25% [3]

NEARLY ABSENT <5% [1]

Cover
Maximum 20
17

3) **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Channel
Maximum 20
19

4) **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input checked="" type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum 10
9.75

5) **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> FAST [1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input checked="" type="checkbox"/> MODERATE [1]
		<input checked="" type="checkbox"/> EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current
Maximum 12
12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Riffle / Run
Maximum 8
8

6) **GRADIENT** (1.7 ft/mi)
DRAINAGE AREA (322.0 mi²)

% POOL: % GLIDE:
% RUN: % RIFFLE:

Gradient
Maximum 10
10

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st - sample pass - 2nd
- < 20 cm
- 20 - < 40 cm
- 40 - 70 cm
- > 70 cm / CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

- 1st _____ cm
- 2nd _____ cm

C) RECREATION

AREA DEPTH

POOL: > 100ft² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCLOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

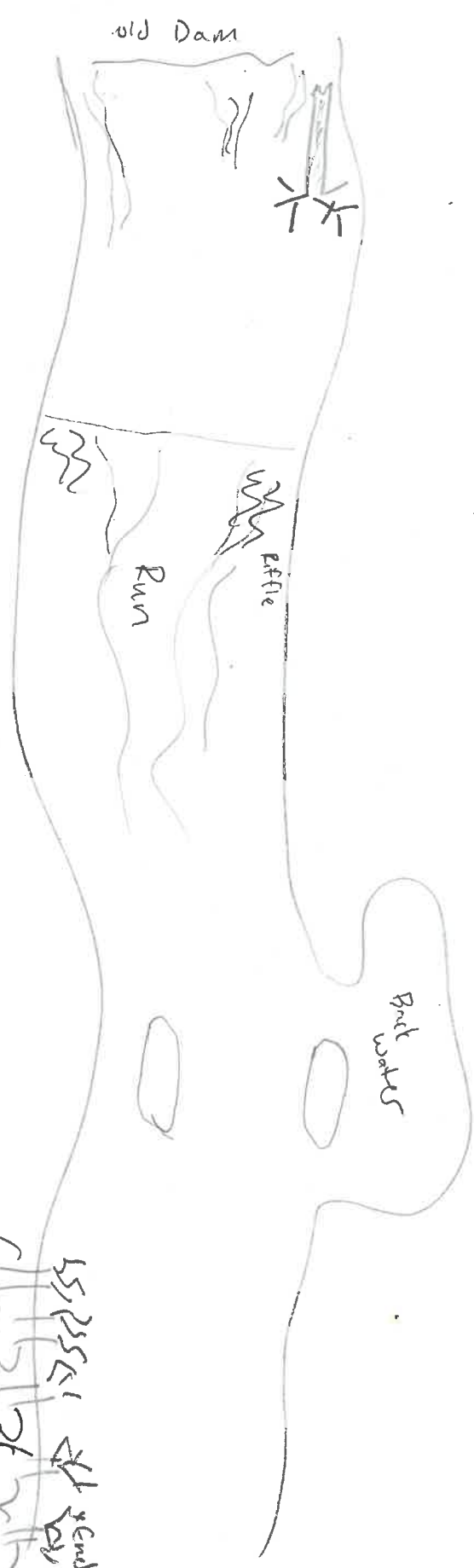
F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:

15525K1
15525K2
15525K3
15525K4
15525K5
15525K6
15525K7
15525K8
15525K9
15525K10
15525K11
15525K12
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15525K96
15525K97
15525K98
15525K99
15525K100



Stream & Location: Adena Brook Ust Olentangy Blvd RM: 0.23 Date: 7/21/2020

ADN01 Scorers Full Name & Affiliation: MAS -> mBI

River Code: 02-401 STORET#: Lat./Long.: 40.0424 183.0266 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR/SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], POOLS > 70cm [2], OXBOWS, BACKWATERS [1], OVERHANGING VEGETATION [1], ROOTWADS [1], AQUATIC MACROPHYTES [1], SHALLOWS (IN SLOW WATER) [1], BOULDERS [1], LOGS OR WOODY DEBRIS [1], ROOTMATS [1].

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION: NONE/LITTLE [3], MODERATE [2], HEAVY/SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], SLOW [1], VERY FAST [1], INTERSTITIAL [-1], FAST [1], INTERMITTENT [-2], MODERATE [1], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Pool / Current Maximum 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Riffle / Run Maximum 8.

6) GRADIENT (22.2 ft/mi) DRAINAGE AREA (2.71 mi^2). VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: [] %GLIDE: [] %RUN: [] %RIFFLE: [] Gradient Maximum 10.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH POOL: >100ft² >3ft

BI/AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLURRIES
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E/ISSUES

- WWTP (CSO) NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

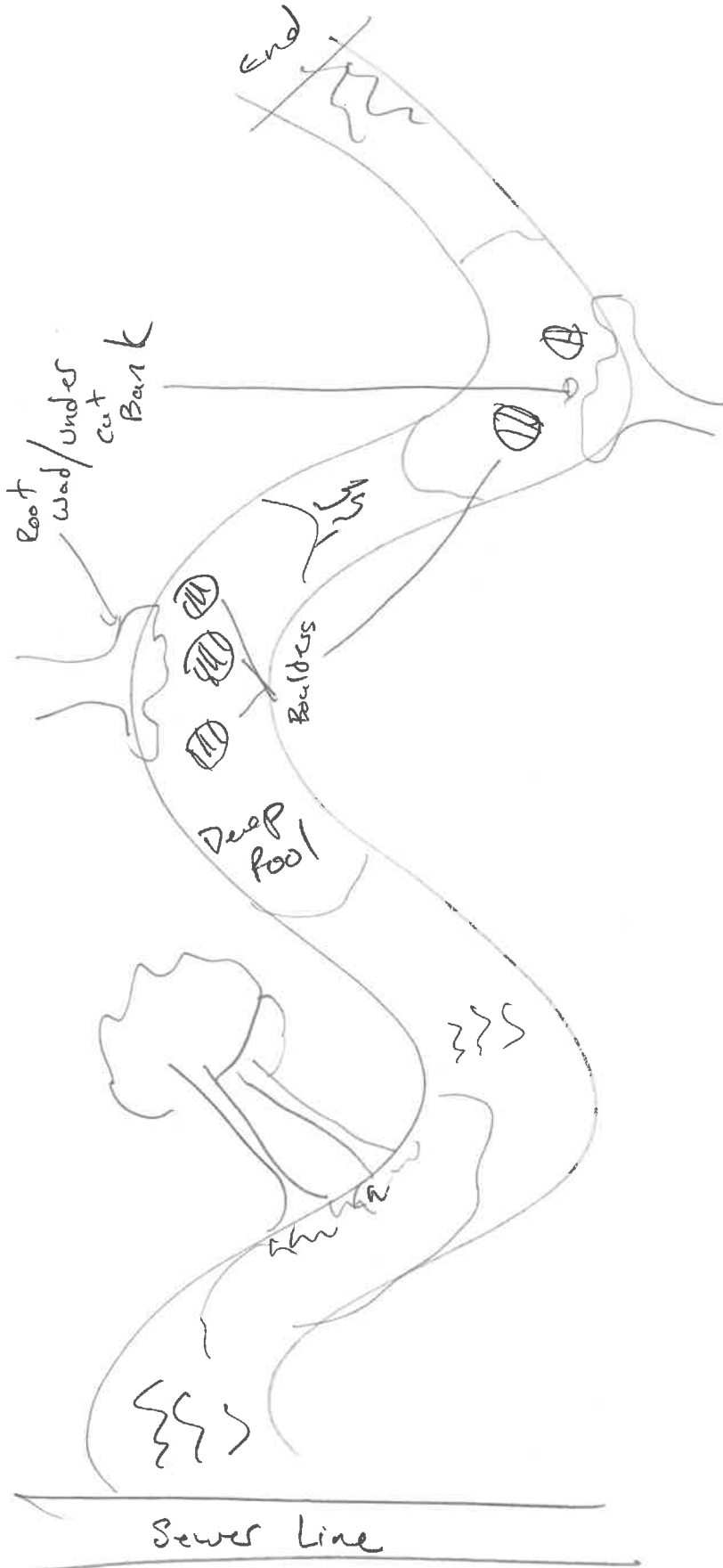
- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Turbidity occurred days prior to sample say park guests, normally clear
Faint sewage smell.

Stream Drawing:



Stream & Location: Adena Brook Dst N. High

RM: 0.52 Date: 7/21/2020

AD No: 2

Scorer's Full Name & Affiliation: MAS -> MBI

River Code: 02-401- STORET#:

Lat./Long.: 40.0432 183.0211

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment section with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes checkboxes for various substrate types and a score box for Substrate (12).

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment section with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score box for Cover (11).

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment section with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, and STABILITY. Includes checkboxes and a score box for Channel (12.5).

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment section with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, and CONSERVATION TILLAGE. Includes checkboxes and a score box for Riparian (9).

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment section with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, and Recreation Potential. Includes checkboxes and a score box for Pool / Current (A).

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle assessment section with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, and RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score box for Riffle / Run (6).

6] GRADIENT (40 ft/mi) DRAINAGE AREA (2.66 mi^2) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10 (8)

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

C) RECREATION

AREA DEPTH
POOL: > 100ft² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

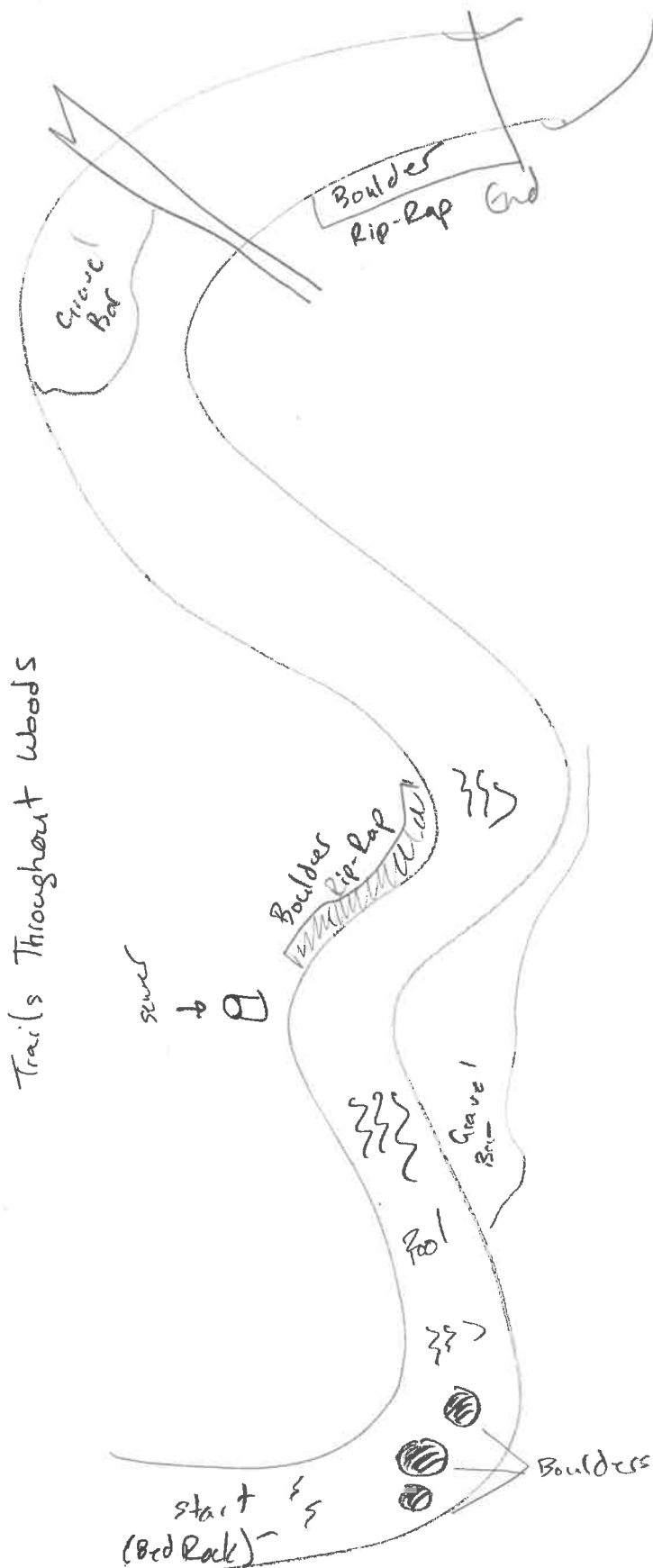
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Trails Throughout Woods

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream & Location: Adena Brook Dst. Overbrook Dr RM: 0.8 Date: 7/21/2020

ADNO3 Scorers Full Name & Affiliation:

River Code: 02-401- STORET#: Lat./Long.: 18 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes checkboxes for various substrate types and a circled score of 10.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a circled score of 15.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a circled score of 15.5.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank erosion and riparian zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes checkboxes and a circled score of 9.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool/glide and riffle/run quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes checkboxes and a circled score of 6.

Recreation Potential Primary Contact Secondary Contact

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Riffle/run quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a circled score of 5.

6] GRADIENT (47.6 ft/mi) DRAINAGE AREA (2.28 mi2)

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st-sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm
2nd _____ cm

CJ RECREATION

AREA DEPTH
POOL: > 100ft² > 3ft

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

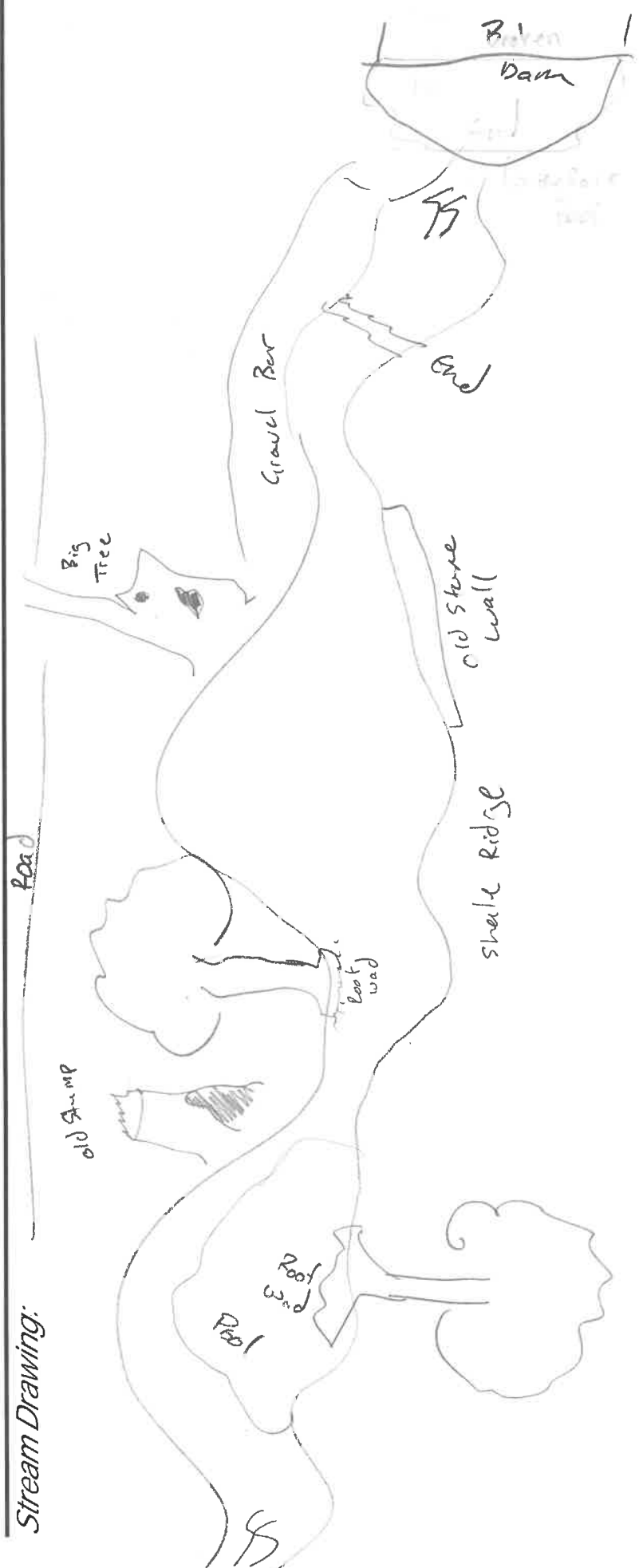
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- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Adena Brook @ Overbrook and Yering RM: 1.7 Date: 7/21/2020

ADN04

Scorers Full Name & Affiliation:

River Code: 02-401- STORET#: Lat/Long: 40.0478183.0058 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes checkboxes for various substrate types and a circled score of 18.5.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a circled score of 15.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a circled score of 14.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank erosion and riparian zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes checkboxes and a circled score of 6.5.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool/glide and riffle/run quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes checkboxes and a circled score of 9.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle/run quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a circled score of 1.

6] GRADIENT (40.0 ft/mi) DRAINAGE AREA (1.8 mi^2) and percentage assessment grid for POOL, GLIDE, RUN, and RIFFLE. Includes checkboxes and a circled score of 8.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st-sample pass--2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICcATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

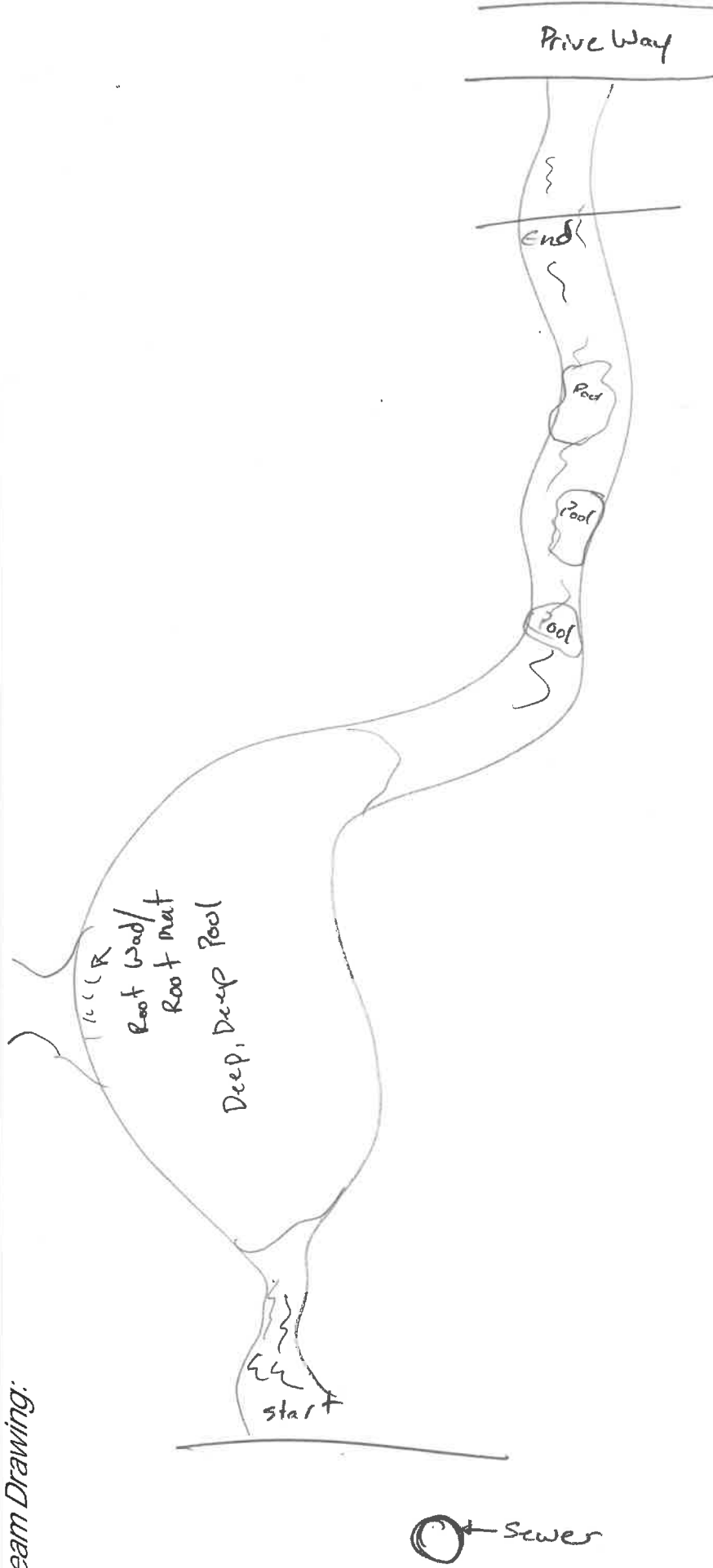
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Beechwood Run Det. Rustic Bridge RM: 0.1 Date: 7/27/2020

BC#01 Scorers Full Name & Affiliation: MAS -> MBT

River Code: 02-483- STORET#: Lat./Long.: 40.0606 183.0262 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes a circled score of 16.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS. Includes a circled score of 17.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a circled score of 17.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE. Includes a circled score of 1.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes a circled score of 5.

Indicate riffle for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a circled score of 2.5.

6] GRADIENT (333.3 ft/mi) DRAINAGE AREA (0.15 mi^2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a circled score of 4.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

CJ RECREATION

AREA DEPTH
POOL: > 100ft² > 3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

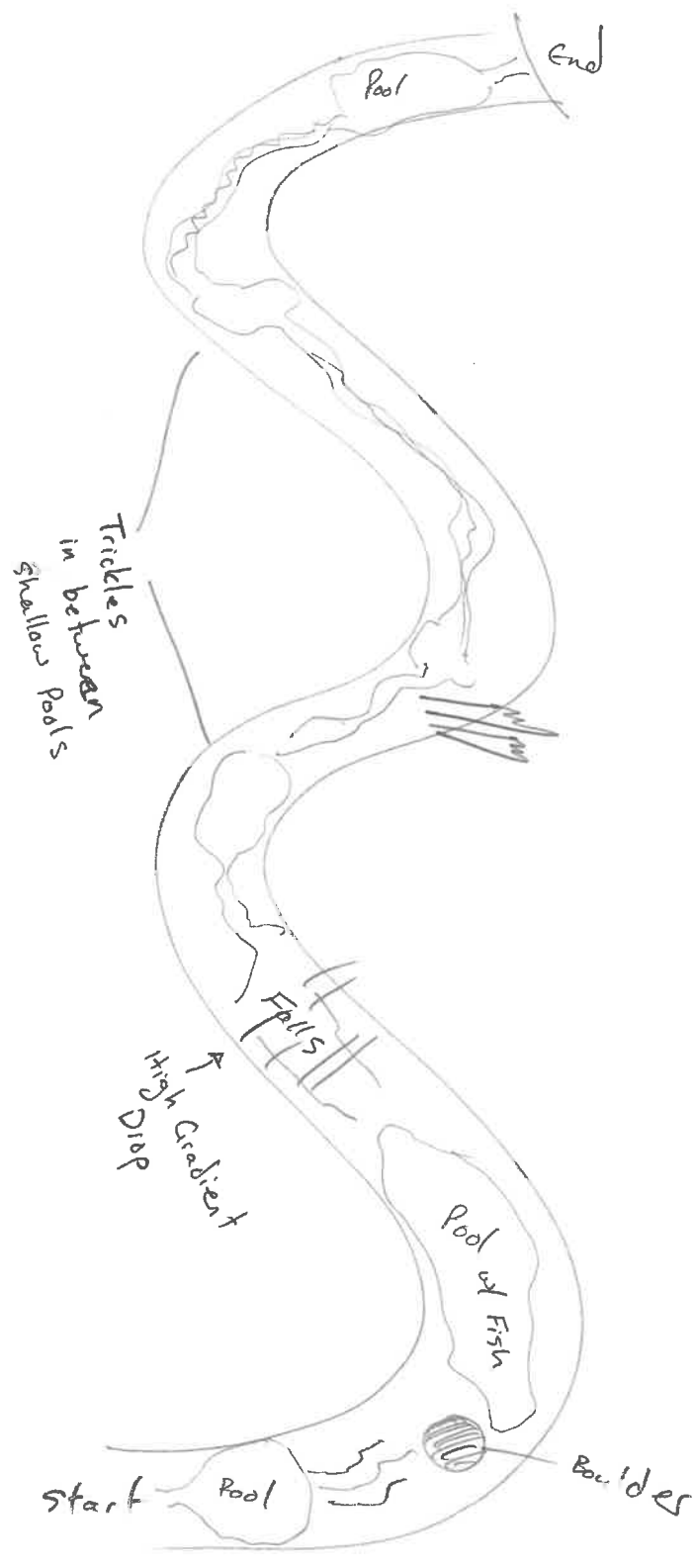
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- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Push Run Ust. Confluence w/ Orientangy R. RM: 0.24 Date: 7/24/2020 RSH01

River Code: 02-403 STORET #: Lat/Long: 40.0763 183.0277 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT. Includes checkboxes for UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE in each category.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK(Or 2 per bank & average). EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes checkboxes for NONE/LITTLE, MODERATE, HEAVY/SEVERE, etc.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Recreation Potential. Includes checkboxes for > 1m, 0.7-1m, 0.4-0.7m, etc.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes for BEST AREAS > 10cm, etc.

6] GRADIENT (62.5 ft/mi) DRAINAGE AREA (2.62 mi2). VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. %POOL, %GLIDE, %RUN, %RIFFLE. Includes checkboxes for VERY LOW, MODERATE, etc.

AJ SAMPLED REACH

Comment RE: Reach consistency/ Is reach typical of stream? , Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

CJ RECREATION

- AREA > 100ft²
- DEPTH > 3ft
- POOL: > 100ft²

BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BED/LOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

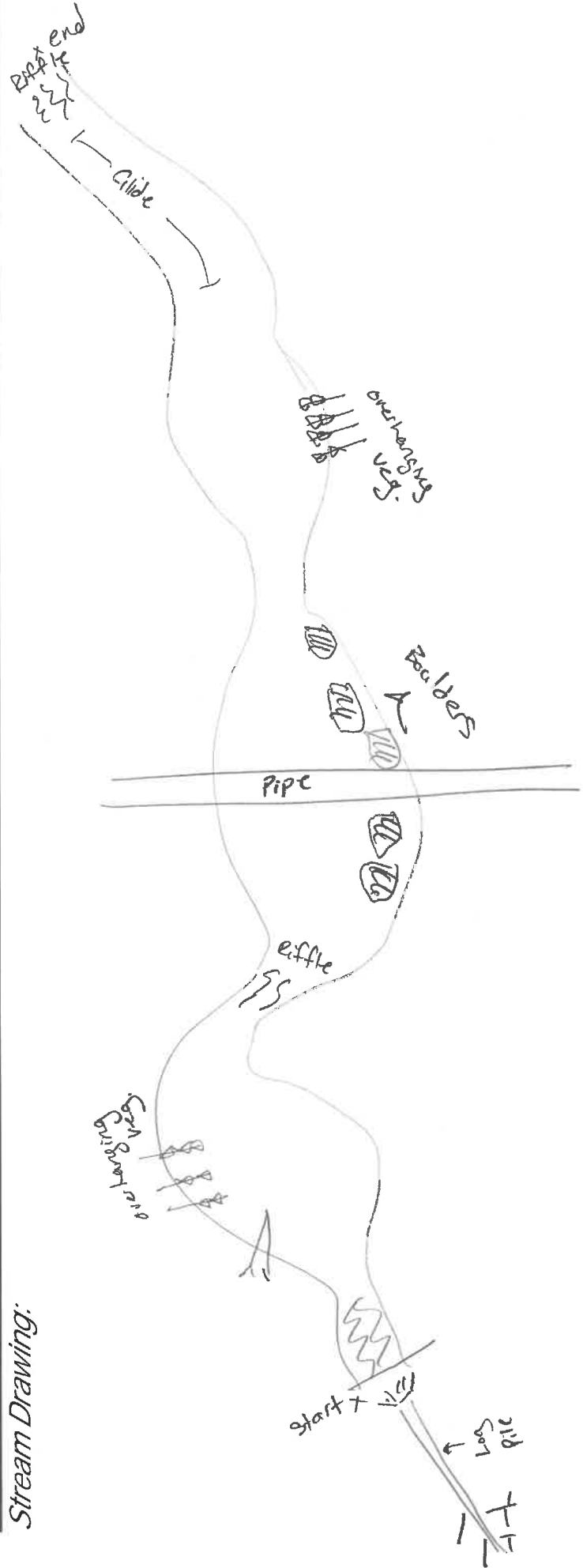
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Rush Run Det. Park Blvd. RSH02

RM: 1.03 Date: 7/22/2020

River Code: 02-403 STORET#:

Scorers Full Name & Affiliation: MAS -> MBI

Lat./Long.: 40.0799 183.0147

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, POOL RIFFLE, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Riffle / Run Quality assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS.

6] GRADIENT (30.3 ft/mi) DRAINAGE AREA (2.29 mi2) VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMORED / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

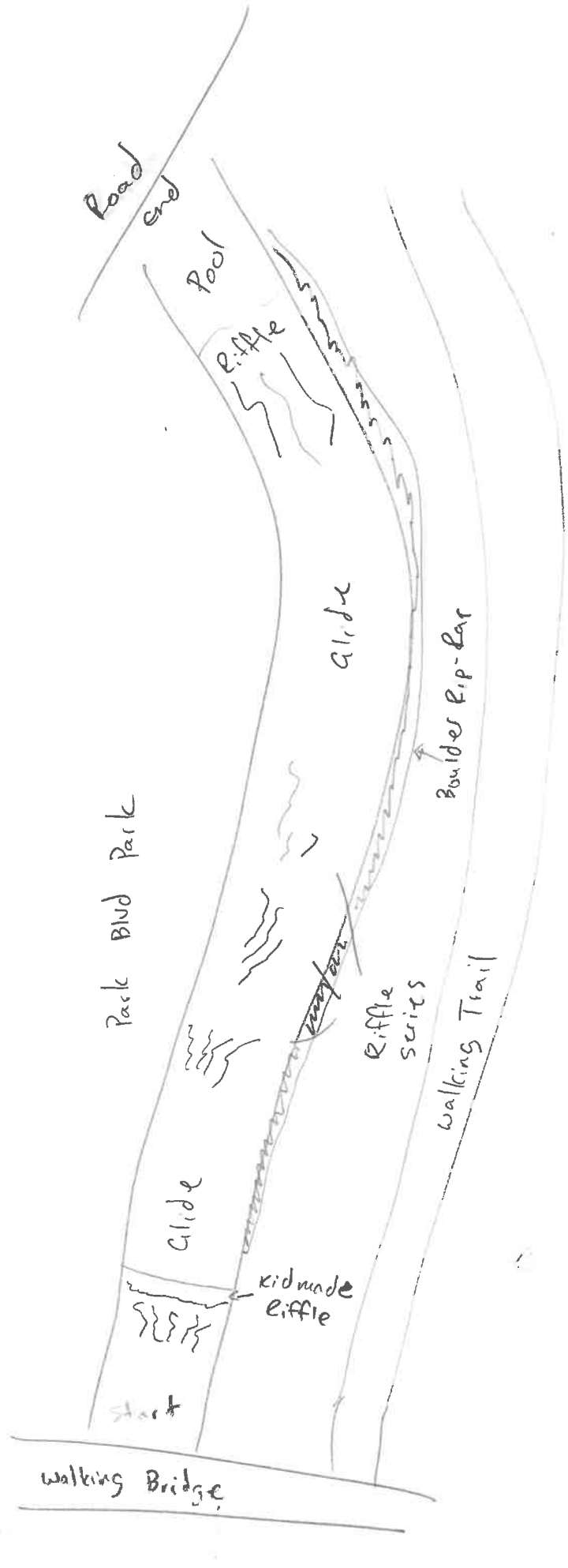
FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

CJ RECREATION

- AREA DEPTH
- POOL: >100ft² >3ft

Stream Drawing:



Stream & Location: Rush Run Ust Proprietors Rd RM: 1.9 Date: 7/24/2020

RS403 Scorers Full Name & Affiliation: MAS - MBI

River Code: 02-403- STORET#: Lat/Long: 40.0867 183.0038 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a circular score box with '16'.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a circular score box with '8'.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a circular score box with '14'.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a circular score box with '10'.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes a circular score box with '13'.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a circular score box with '2'.

6] GRADIENT (83.3 ft/mi) DRAINAGE AREA (1.67 m2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a circular score box with 'A'.

A) SAMPLED REACH

Check ALL that apply

METHOD

1st-sample pass-- 2nd

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10% - CLOSED

1st _____ cm
2nd _____ cm

C) RECREATION

AREA DEPTH
POOL: >100ft² >3ft

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

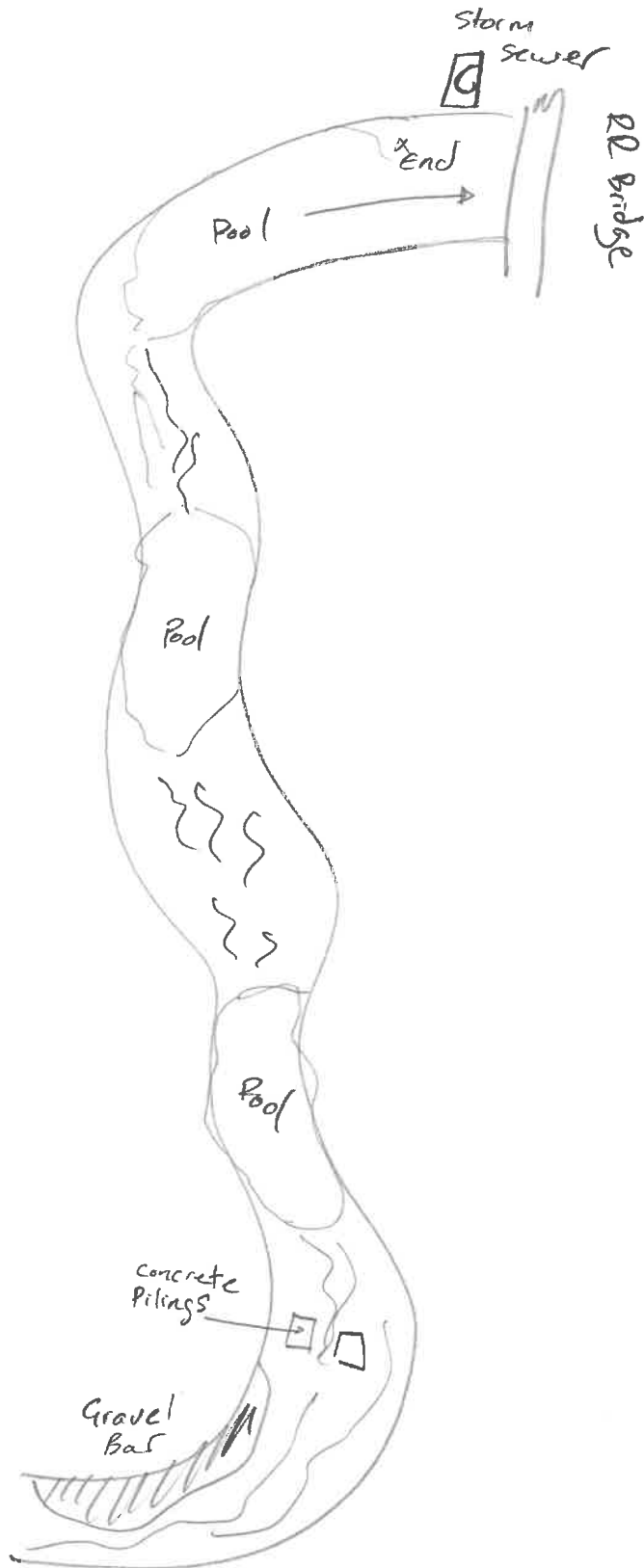
D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

Stream Drawing:



Stream & Location: Rush Run Dist Schrock Rd RM: 2.9 Date: 7/24/2020

River Code: 02-403 STORET #: Lat/Long: 40.0992183, 0015 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a 'Substrate' score box with value 17.5.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a 'Cover' score box with value 1.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a 'Channel' score box with value 11.5.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes a 'Riparian' score box with value 5.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes a 'Pool / Current' score box with value 3.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' score box with value 6.

6] GRADIENT (8.7 ft/mi) DRAINAGE AREA (0.69 mi^2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a 'Gradient' score box with value 6.

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st pass _____ cm
- 2nd pass _____ cm

C/ RECREATION

- AREA DEPTH
- POOL: >100ft² >3ft

B/ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM/ SCUM
- OIL SHEEN
- TRASH/ LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D/ J MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E/ ISSUES

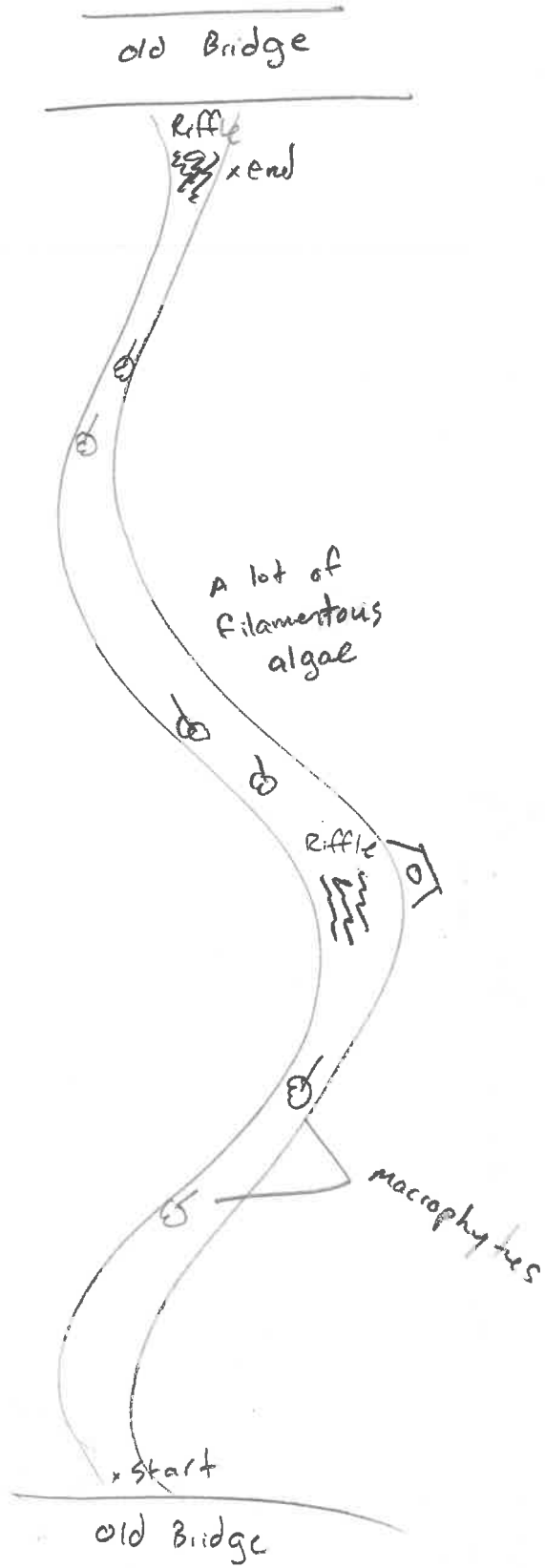
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F/ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Rush Run Dst. Wilson Bridge Rd RSH05 RM: 3.55 Date: 7/24/2020

River Code: 02-403- STORET #: Lat/Long: 40.1079 183.0013 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a circled '0' for Substrate Maximum 20.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a circled '11' for Cover Maximum 20.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a circled '5' for Channel Maximum 20.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Includes a circled '3.5' for Riparian Maximum 10.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes a circled '1' for Pool / Current Maximum 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a circled '0' for Riffle / Run Maximum 8.

6] GRADIENT (8.7 ft/mi) DRAINAGE AREA (0.36 mi^2) Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH, %POOL, %GLIDE, %RUN, %RIFFLE. Includes a circled '6' for Gradient Maximum 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st--sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm
2nd _____ cm

CJ RECREATION

AREA DEPTH
POOL: >100ft² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

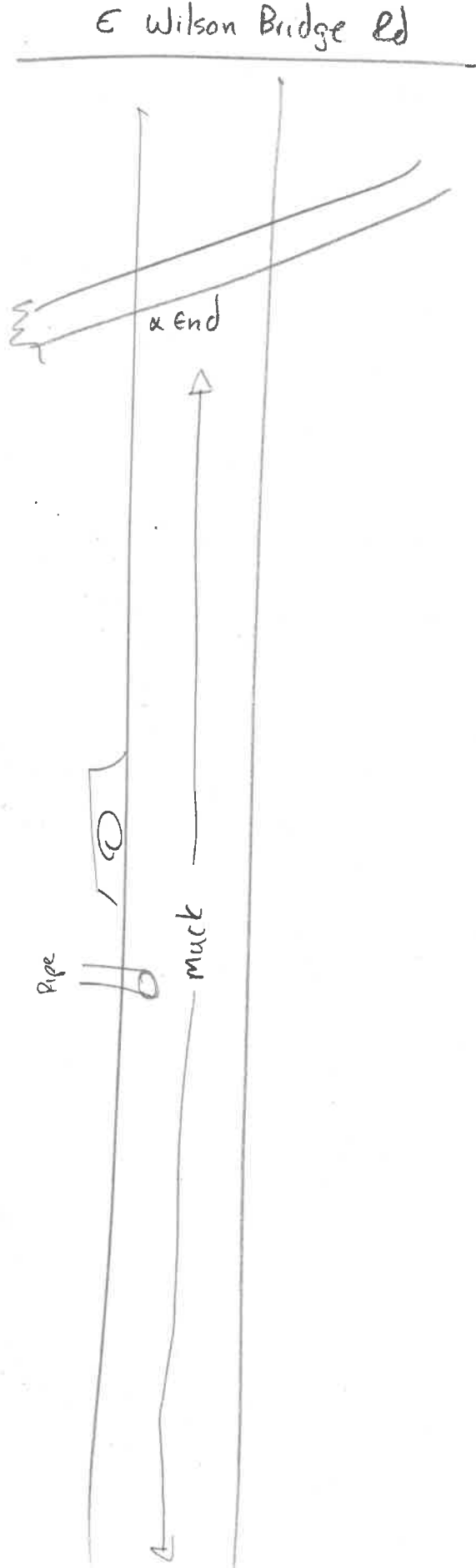
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- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Oletangy R. Dist Dodridge Dam RM: 3.95 Date: 9/14/2020

OLNOI Scorer's Full Name & Affiliation: MAS -> MBI

River Code: 02-400 STORET#: Lat/Long: 40.01661 183.01647 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], SLOW [1], VERY FAST [1], INTERSTITIAL [-1], FAST [1], INTERMITTENT [-2], MODERATE [1], EDDIES [1].

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE (e.g., Cobble, Boulder) [2], MOD. STABLE (e.g., Large Gravel) [1], UNSTABLE (e.g., Fine Gravel, Sand) [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1].

6] GRADIENT (2.63 f/mi) DRAINAGE AREA (531 mi2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE:

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st - sample pass-- 2nd
 - HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st - sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st _____ cm
- 2nd _____ cm

C) RECREATION

AREA DEPTH

POOL: >100m² >3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- (RELOCATED) CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPounded / DESICCATED
- FLOOD CONTROL / DRAINAGE

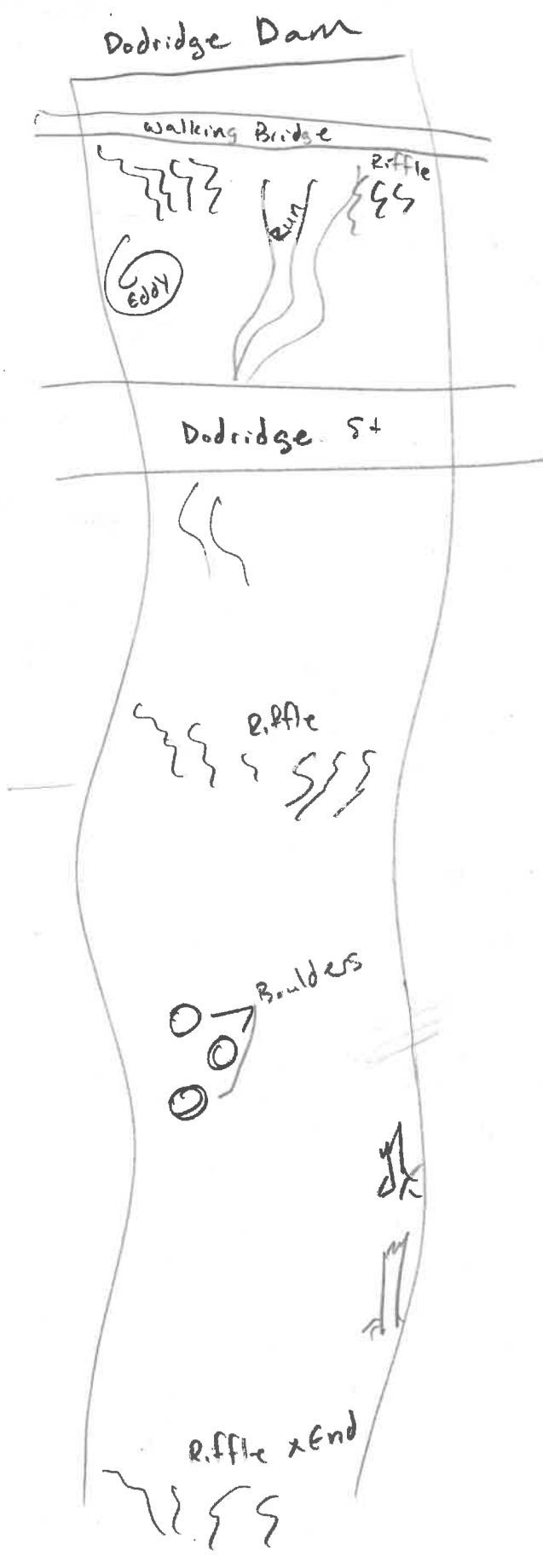
E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entrench. ratio

Legacy Tree:



Stream Drawing:

Stream & Location: Ontonagon R. just 5th Ave RM: 2.0 Date: 9/15/2020

River Code: 02-400- STORET #: _____ Lat./Long.: 39.98887 183.02428 Office verified location
 Scorers Full Name & Affiliation: MAS MBI

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	SILT	<input type="checkbox"/> HEAVY [-2]	Substrate
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]		<input type="checkbox"/> MODERATE [-1]	
<input checked="" type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	EMBEDDEDNESS	<input type="checkbox"/> NORMAL [0]	Maximum 20
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/> NORMAL [0]	
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> NONE [1]		
Comments _____				<input type="checkbox"/> SHALE [-1]			
				<input type="checkbox"/> COAL FINES [-2]			

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> AMOUNT
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

Cover Maximum 20 13

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input checked="" type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

Channel Maximum 20 16

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input checked="" type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments _____

Riparian Maximum 10 5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Pool / Current Maximum 12
<input type="checkbox"/> 0.7-<1m [4]	<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

Indicate for reach - pools and riffles.

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments _____

Riffle / Run Maximum 8 8

6] GRADIENT (3.86 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (537 mi²)

%POOL: %GLIDE:

%RUN: %RIFFLE:

Gradient Maximum 10 8

Entered 12-17-20

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st sample pass-- 2nd
 - HIGH
 - UP
 - NORMAL
 - LOW
 - DRY
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

CLARITY

- 1st sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

β₅₀

- meters
- CANOPY**
- 1st
- 2nd
- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

CJ RECREATION

- AREA DEPTH
- POOL: > 100m² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E) ISSUES

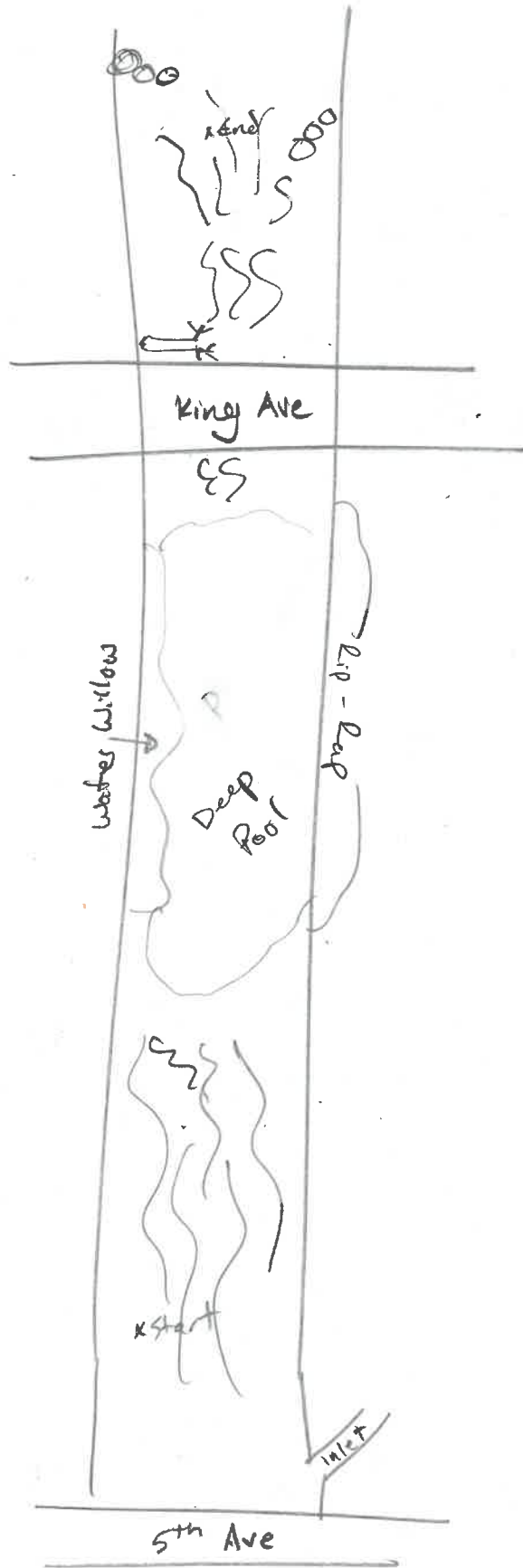
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x} width
- entranch. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Olentangy R. Ust 3rd Ave

RM: L-8 Date: 9/18/2020

River Code: 02-400- STORET #: Lat./Long.: 39.98742 183.02408

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLE
BLDR /SLABS [10] BOULDER [9] COBBLE [8] GRAVEL [7] SAND [6] BEDROCK [5]
HARDPAN [4] DETRITUS [3] MUCK [2] SILT [2] ARTIFICIAL [0]

ORIGIN
LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] RIP/RAP [0] LACUSTURINE [0] SHALE [-1] COAL FINES [-2]

QUALITY
HEAVY [-2] MODERATE [-1] NORMAL [0] FREE [1] EXTENSIVE [-2] MODERATE [-1] NORMAL [0] NONE [1]

Substrate Maximum 20

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

1 UNDERCUT BANKS [1] 1 OVERHANGING VEGETATION [1] 3 SHALLOWS (IN SLOW WATER) [1] 1 ROOTMATS [1]

3 POOLS > 70cm [2] 1 ROOTWADS [1] 2 BOULDERS [1]

0 OXBOWS, BACKWATERS [1] 2 AQUATIC MACROPHYTES [1] 1 LOGS OR WOODY DEBRIS [1]

EXTENSIVE >75% [1] MODERATE 25-75% [7] SPARSE 5-<25% [3] NEARLY ABSENT <5% [1]

Cover Maximum 20

Comments

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY
HIGH [4] EXCELLENT [7] NONE [0] RECOVERED [4] RECOVERING [3] RECENT OR NO RECOVERY [1]
MODERATE [3] GOOD [5] MODERATE [2]
LOW [2] FAIR [3] LOW [1]
NONE [1] POOR [1]

Channel Maximum 20

Comments

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION RIPARIAN WIDTH FLOOD PLAIN QUALITY
NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE [1]
WIDE > 50m [4] MODERATE 10-50m [3] NARROW 5-10m [2] VERY NARROW < 5m [1] NONE [0]
FOREST, SWAMP [3] SHRUB OR OLD FIELD [2] RESIDENTIAL, PARK, NEW FIELD [1] FENCED PASTURE [1] OPEN PASTURE, ROWCROP [0]
CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] MINING / CONSTRUCTION [0]

Riparian Maximum 10

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH CHANNEL WIDTH CURRENT VELOCITY
> 1m [6] 0.7-<1m [4] 0.4-<0.7m [2] 0.2-<0.4m [1] < 0.2m [0]
POOL WIDTH > RIFFLE WIDTH [2] POOL WIDTH = RIFFLE WIDTH [1] POOL WIDTH < RIFFLE WIDTH [0]
TORRENTIAL [-1] VERY FAST [1] FAST [1] MODERATE [1] SLOW [1] INTERSTITIAL [-1] INTERMITTENT [-2] EDDIES [1]

Recreation Potential Primary Contact Secondary Contact

Pool / Current Maximum 12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average)

NO RIFFLE [metric=0]

RIFFLE DEPTH RUN DEPTH RIFFLE / RUN SUBSTRATE RIFFLE / RUN EMBEDDEDNESS
BEST AREAS > 10cm [2] BEST AREAS 5-10cm [1] BEST AREAS < 5cm [metric=0]
MAXIMUM > 50cm [2] MAXIMUM < 50cm [1]
STABLE (e.g., Cobble, Boulder) [2] MOD. STABLE (e.g., Large Gravel) [1] UNSTABLE (e.g., Fine Gravel, Sand) [0]
NONE [2] LOW [1] MODERATE [0] EXTENSIVE [-1]

Riffle / Run Maximum 8

Comments

6] GRADIENT (4.34 ft/mi) DRAINAGE AREA (137 mi2)
VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10

Entered 12-17-20

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st. _____ cm
2nd. _____ cm

CJ RECREATION

- POOL: >100m²
- >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

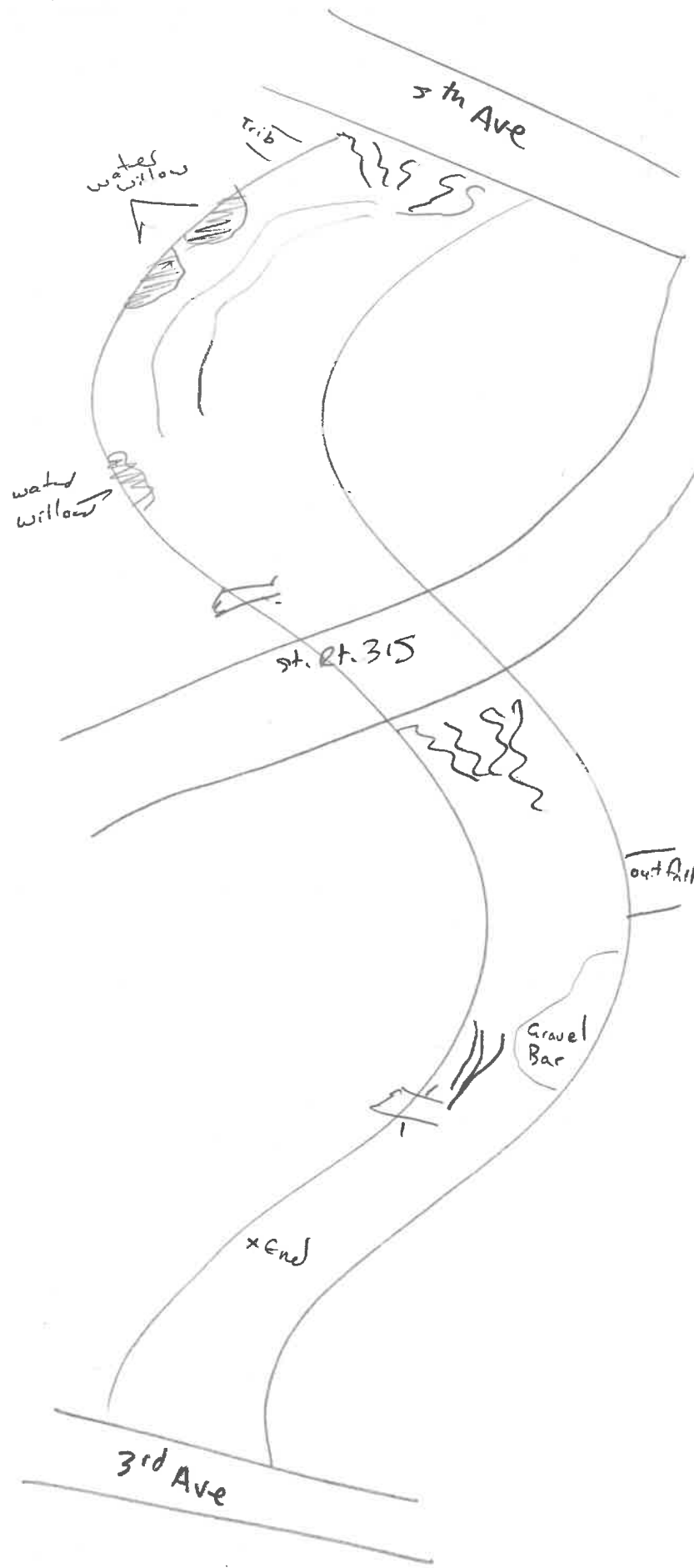
- WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FI MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Oberlinery R. Jct Confluence w/ Scioto RM: 0.2 Date: 9/04/2020

River Code: 02-400 STORET #: _____ Lat./Long.: 39.90651 183.01886 Office verified location

Scorers Full Name & Affiliation: MAS

1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<p>BEST TYPES</p> <input type="checkbox"/> BLDR /SLABS [10] <input checked="" type="checkbox"/> BOULDER [9] <input checked="" type="checkbox"/> COBBLE [8] <input type="checkbox"/> GRAVEL [7] <input type="checkbox"/> SAND [6] <input type="checkbox"/> BEDROCK [5]	<p>POOL RIFFLE</p> <p>_____</p>	<p>OTHER TYPES</p> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> MUCK [2] <input type="checkbox"/> SILT [2] <input type="checkbox"/> ARTIFICIAL [0]	<p>POOL RIFFLE</p> <p>_____</p>	<p>ORIGIN</p> <input type="checkbox"/> LIMESTONE [1] <input checked="" type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LACUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	<p>QUALITY</p> <input type="checkbox"/> HEAVY [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1]
---	--	--	--	--	--

Check ONE (Or 2 & average)

SILT EMBEDDEDNESS

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments _____

Substrate
20
 Maximum 20

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<p>0 UNDERCUT BANKS [1] 0 OVERHANGING VEGETATION [1] 3 SHALLOWS (IN SLOW WATER) [1] 0 ROOTMATS [1]</p>	<p>1 POOLS > 70cm [2] 0 ROOTWADS [1] 3 BOULDERS [1]</p>	<p>3 OXBOWS, BACKWATERS [1] 0 AQUATIC MACROPHYTES [1] 1 LOGS OR WOODY DEBRIS [1]</p>	<p>AMOUNT</p> <input type="checkbox"/> EXTENSIVE >75% [11] <input checked="" type="checkbox"/> MODERATE 25-75% [7] <input type="checkbox"/> SPARSE 5-<25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1]
---	--	--	--

Check ONE (Or 2 & average)

Comments _____

Cover
 Maximum 20
13

3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<p>SINUOSITY</p> <input type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input checked="" type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<p>DEVELOPMENT</p> <input type="checkbox"/> EXCELLENT [7] <input checked="" type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<p>CHANNELIZATION</p> <input type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input checked="" type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<p>STABILITY</p> <input checked="" type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]
--	--	--	---

Comments _____

Channel
 Maximum 20
13

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<p>River right looking downstream</p> <p>EROSION</p> <input checked="" type="checkbox"/> NONE / LITTLE [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> HEAVY / SEVERE [1]	<p>RIPARIAN WIDTH</p> <input type="checkbox"/> WIDE > 50m [4] <input checked="" type="checkbox"/> MODERATE 10-50m [3] <input type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> VERY NARROW < 5m [1] <input type="checkbox"/> NONE [0]	<p>FLOOD PLAIN QUALITY</p> <input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<p>CONSERVATION TILLAGE [1] <input type="checkbox"/> URBAN OR INDUSTRIAL [0] <input type="checkbox"/> MINING / CONSTRUCTION [0]</p> <p>Indicate predominant land use(s) past 100m riparian.</p>
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Comments _____

Riparian
 Maximum 10
6

5] **POOL / GLIDE AND RIFFLE / RUN QUALITY**

<p>MAXIMUM DEPTH Check ONE (ONLY!)</p> <input checked="" type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7-1m [4] <input type="checkbox"/> 0.4-0.7m [2] <input type="checkbox"/> 0.2-0.4m [1] <input type="checkbox"/> < 0.2m [0]	<p>CHANNEL WIDTH Check ONE (Or 2 & average)</p> <input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<p>CURRENT VELOCITY Check ALL that apply</p> <input type="checkbox"/> TORRENTIAL [-1] <input checked="" type="checkbox"/> VERY FAST [1] <input checked="" type="checkbox"/> FAST [1] <input checked="" type="checkbox"/> MODERATE [1] <input checked="" type="checkbox"/> SLOW [1] <input type="checkbox"/> INTERSTITIAL [-1] <input type="checkbox"/> INTERMITTENT [-2] <input checked="" type="checkbox"/> EDDIES [1]	<p>Recreation Potential</p> <p>Primary Contact Secondary Contact (circle one and comment on back)</p>
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Indicate for reach - pools and riffles.

Comments _____

Pool / Current
 Maximum 12
11

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

<p>RIFFLE DEPTH</p> <input checked="" type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p>RUN DEPTH</p> <input checked="" type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	<p>RIFFLE / RUN SUBSTRATE</p> <input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p>RIFFLE / RUN EMBEDDEDNESS</p> <input checked="" type="checkbox"/> NONE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]
--	---	---	--

Comments _____

Riffle / Run
 Maximum 8
8

6] **GRADIENT** (4.34 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (543 mi²)

%POOL: 1 %GLIDE: 33

%RUN: 33 %RIFFLE: 33

Gradient Maximum 10 10

Entered
 12.17.20

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

STAGE

- 1st - sample pass - 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st - sample pass - 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / CTB
- SECCHI DEPTH

300

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

1st _____ cm

2nd _____ cm

CJ RECREATION

AREA DEPTH
POOL: > 100r² > 3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLOURED
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

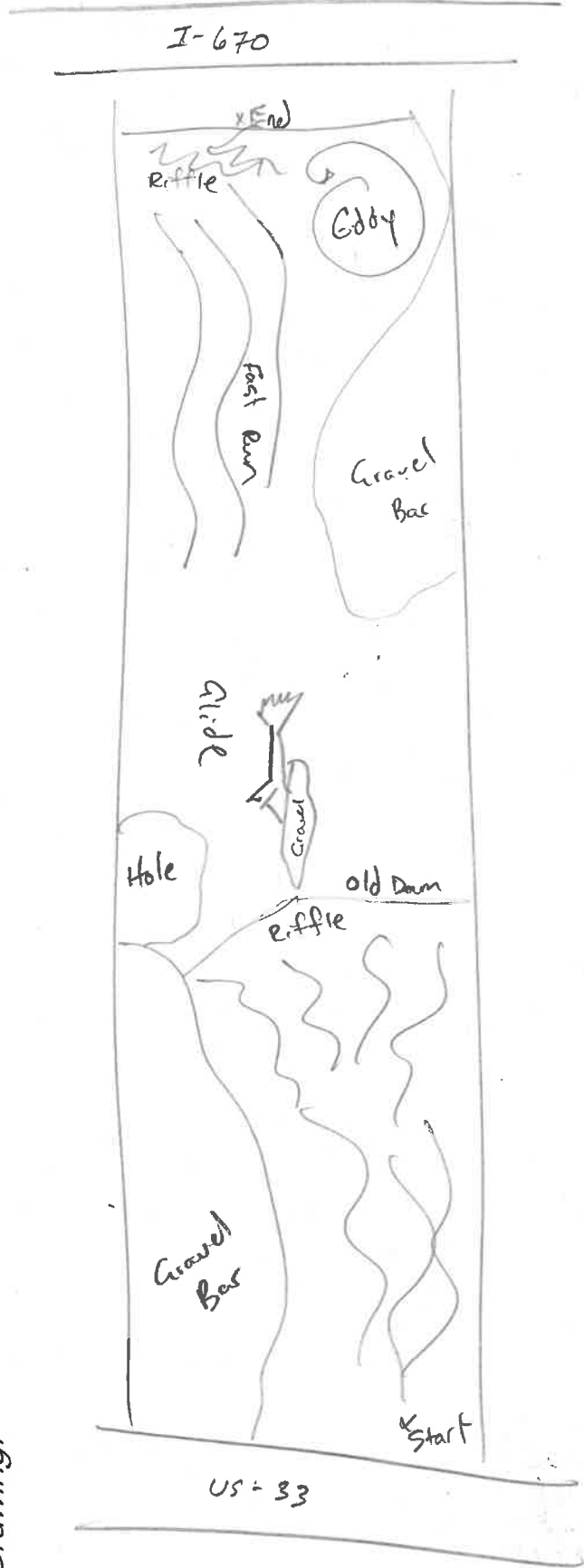
FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



Stream & Location: Oentany River Dist 04-750 RM: 14.9 Date: 8/27/2020

OLN05 Scorers Full Name & Affiliation: MAS MBT

River Code: 02-400- STORET#: Lat/Long: 40.1554 183.0453 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Check ONE (Or 2 & average). AMOUNT. Includes checkboxes for UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE, EXCELLENT, GOOD, FAIR, POOR, etc.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes checkboxes for NONE/LITTLE, MODERATE, HEAVY/SEVERE, etc.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY. MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Check ONE (ONLY!), Check ONE (Or 2 & average), Check ALL that apply. Includes checkboxes for > 1m, 0.7-1m, etc.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes for BEST AREAS > 10cm, etc.

6] GRADIENT (13.9 ft/mi) DRAINAGE AREA (482 mi^2). VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. %POOL, %GLIDE, %RUN, %RIFFLE. Includes empty boxes for percentages.

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. -sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

C) RECREATION

AREA DEPTH
POOL: > 100ft² > 3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

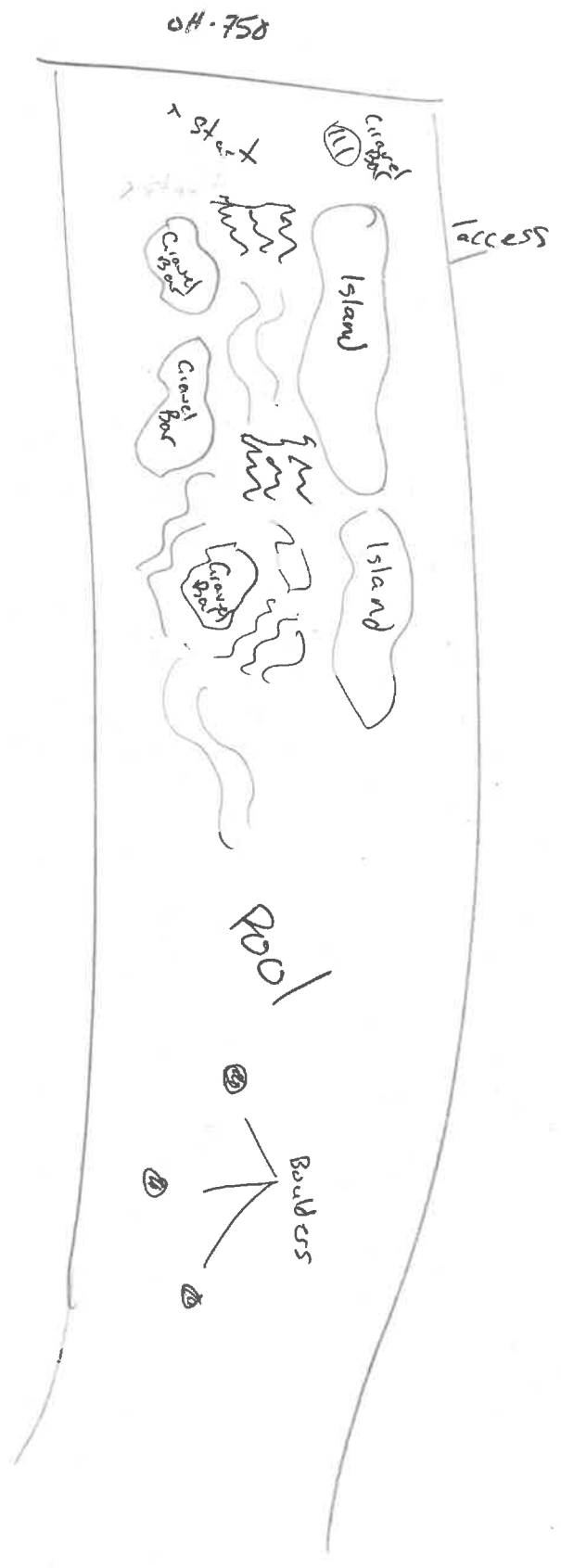
E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQNS TRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:



Stream Drawing:

Stream & Location: Olenburg R Dist Olenburg ECC RM: 12.9 Date: 9/15/2020

OL No: 7 Scorers Full Name & Affiliation: MAS MBI
 River Code: 02-400- STORET #: _____ Lat./Long.: 40.13042 183.03453 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY	
<input type="checkbox"/>	BLDR /SLABS [10]	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>	_____	<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	DETRITUS [3]	<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	TILLS [1]	<input checked="" type="checkbox"/>	MODERATE [-1]
<input checked="" type="checkbox"/>	COBBLE [8]	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>	_____	<input type="checkbox"/>	WETLANDS [0]	<input type="checkbox"/>	NORMAL [0]
<input checked="" type="checkbox"/>	GRAVEL [7]	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	SILT [2]	<input type="checkbox"/>	_____	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]
<input type="checkbox"/>	SAND [6]	<input checked="" type="checkbox"/>	X	<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>	_____	<input type="checkbox"/>	SANDSTONE [0]	<input checked="" type="checkbox"/>	EXTENSIVE [-2]
<input type="checkbox"/>	BEDROCK [5]							<input type="checkbox"/>	RIP/RAP [0]	<input checked="" type="checkbox"/>	MODERATE [-1]
				(Score natural substrates; ignore sludge from point-sources)				<input type="checkbox"/>	LACUSTURINE [0]	<input type="checkbox"/>	NORMAL [0]
NUMBER OF BEST TYPES:				<input checked="" type="checkbox"/> 4 or more				<input checked="" type="checkbox"/>	SHALE [-1]	<input type="checkbox"/>	NONE [1]
				<input type="checkbox"/> 3 or less [0]				<input checked="" type="checkbox"/>	COAL FINES [-2]		

Check ONE (Or 2 & average)

Comments: _____

Substrate Maximum 20 15

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>0</u>	UNDERCUT BANKS [1]	<u>1</u>	POOLS > 70cm [2]	<u>0</u>	OSBOWS, BACKWATERS [1]	<input checked="" type="checkbox"/>	EXTENSIVE >75% [11]
<u>1</u>	OVERHANGING VEGETATION [1]	<u>1</u>	ROOTWADS [1]	<u>0</u>	AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/>	MODERATE 25-75% [7]
<u>3</u>	SHALLOWS (IN SLOW WATER) [1]	<u>3</u>	BOULDERS [1]	<u>3</u>	LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/>	SPARSE 5-<25% [3]
<u>1</u>	ROOTMATS [1]					<input type="checkbox"/>	NEARLY ABSENT <5% [1]

Check ONE (Or 2 & average)

Comments: _____

Cover Maximum 20 15

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments: _____

Channel Maximum 20 12

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input checked="" type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Comments: _____

Riparian Maximum 10 9.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<input checked="" type="checkbox"/> SLOW [1]
<input checked="" type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERMITTENT [-2]
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	<input type="checkbox"/> EDDIES [1]
<input type="checkbox"/> < 0.2m [0]			

Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply

Indicate for reach - pools and riffles.

Comments: _____

Pool / Current Maximum 12 6

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average) NO RIFFLE [metric=0]

<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]
			<input checked="" type="checkbox"/> EXTENSIVE [-1]

Comments: _____

Riffle / Run Maximum 8 5

6] GRADIENT (5.78 ft/mi) VERY LOW - LOW [2-4] %POOL: %GLIDE:

DRAINAGE AREA (489 mi²) MODERATE [6-10] %RUN: %RIFFLE:

HIGH - VERY HIGH [10-6] Gradient Maximum 10 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

CLARITY

- 1st. sample pass-- 2nd
- < 20 cm
 - 20-40 cm
 - 40-70 cm
 - > 70 cm/ CTB
 - SECCHI DEPTH

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%-CLOSED

CJ RECREATION

AREA DEPTH
POOL: >100m² >3ft

STAGE

- 1st. sample pass-- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURD / SLUMPS
- ISLANDS / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

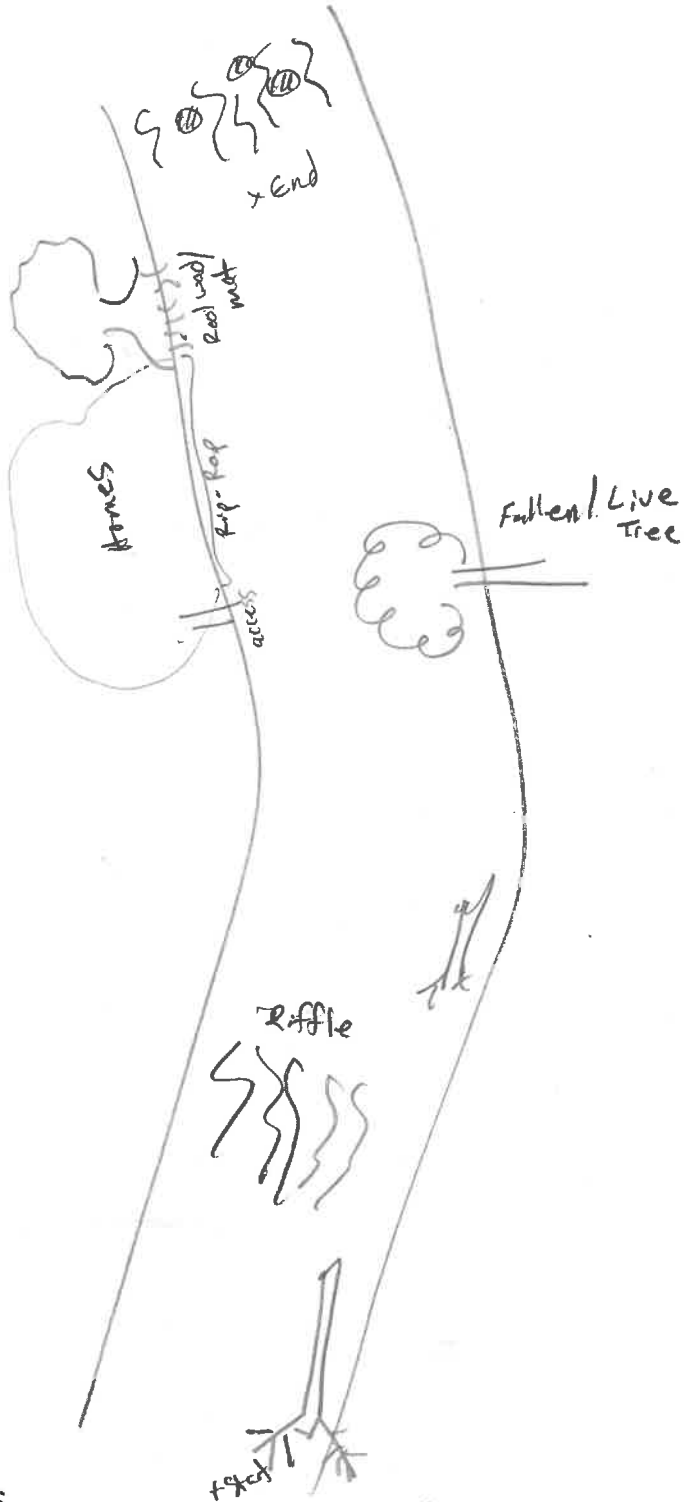
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Stream & Location: Otterfang R. Vst. I-270 RM: 12.3 Date: 9/15/2020

OLN08 Scorers Full Name & Affiliation: MAS MBJ

River Code: 02-400 STORET#: Lat./Long.: 40.12185 183.03221 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR /SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], TILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1]. NUMBER OF BEST TYPES: 4 or more [2], 3 or less [0]. Comments

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [11], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], POOLS >70cm [2], OXBOWS, BACKWATERS [1], OVERHANGING VEGETATION [1], ROOTWADS [1], AQUATIC MACROPHYTES [1], SHALLOWS (IN SLOW WATER) [1], BOULDERS [1], LOGS OR WOODY DEBRIS [1], ROOTMATS [1]. Comments

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1]. Comments

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION: NONE / LITTLE [3], MODERATE [2], HEAVY / SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0]. Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], VERY FAST [1], FAST [1], MODERATE [1], SLOW [1], INTERSTITIAL [-1], INTERMITTENT [-2], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE [2], MOD. STABLE [1], UNSTABLE [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1]. Comments

6] GRADIENT (2.91 ft/mi) DRAINAGE AREA (490 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH POOL: >100ft >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

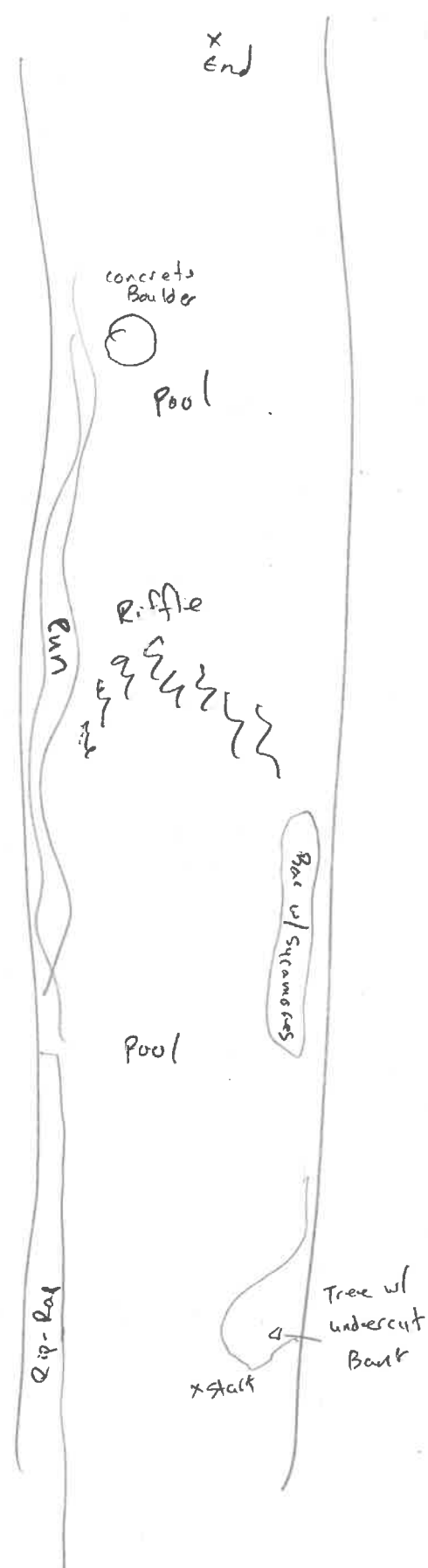
EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQNSSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Stream Drawing:



Stream & Location: Olentony R. Dist Antrim Park RM: 8.5 Date: 9/03/2020

River Code: 02-400 STORET #: _____ Lat/Long: 40.0742 183.0350 Office verified location

Scorers Full Name & Affiliation: MAS MBZ

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input checked="" type="checkbox"/> HEAVY [-2]	5.5 Substrate Maximum 20
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input checked="" type="checkbox"/> TILLS [1]		<input checked="" type="checkbox"/> MODERATE [-1]	
<input checked="" type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> WETLANDS [0]		<input type="checkbox"/> NORMAL [0]	
<input checked="" type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]		<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SANDSTONE [0]		<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]				<input type="checkbox"/> RIP/RAP [0]		<input checked="" type="checkbox"/> MODERATE [-1]	
(Score natural substrates; ignore sludge from point-sources)				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> EMBEDDEDNESS	<input type="checkbox"/> NORMAL [0]	
				<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]	

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments _____

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter root that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.)

<u>0</u> UNDERCUT BANKS [1]	<u>3</u> POOLS > 70cm [2]	<u>0</u> OXBOWS, BACKWATERS [1]	<input checked="" type="checkbox"/> EXTENSIVE >75% [11]
<u>0</u> OVERHANGING VEGETATION [1]	<u>2</u> ROOTWADS [1]	<u>0</u> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<u>2</u> SHALLOWS (IN SLOW WATER) [1]	<u>3</u> BOULDERS [1]	<u>1</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<u>2</u> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

Cover Maximum 20 14

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

Channel Maximum 20 14

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments _____

Riparian Maximum 10 8.75

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCITY Check ALL that apply	Recreation Potential Primary Contact Secondary Contact <small>(circle one and comment on back)</small>
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-<1m [4]	<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	

Indicate for reach - pools and riffles.

Comments _____

Pool / Current Maximum 12 10

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

Comments _____

Riffle / Run Maximum 8 8

6] GRADIENT (2.91 ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (510 mi²)

% POOL: % GLIDE:

% RUN: % RIFFLE:

Comments _____

Gradient Maximum 10 8

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st. sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

CJ RECREATION

AREA DEPTH POOL: >100m² >3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-COINSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

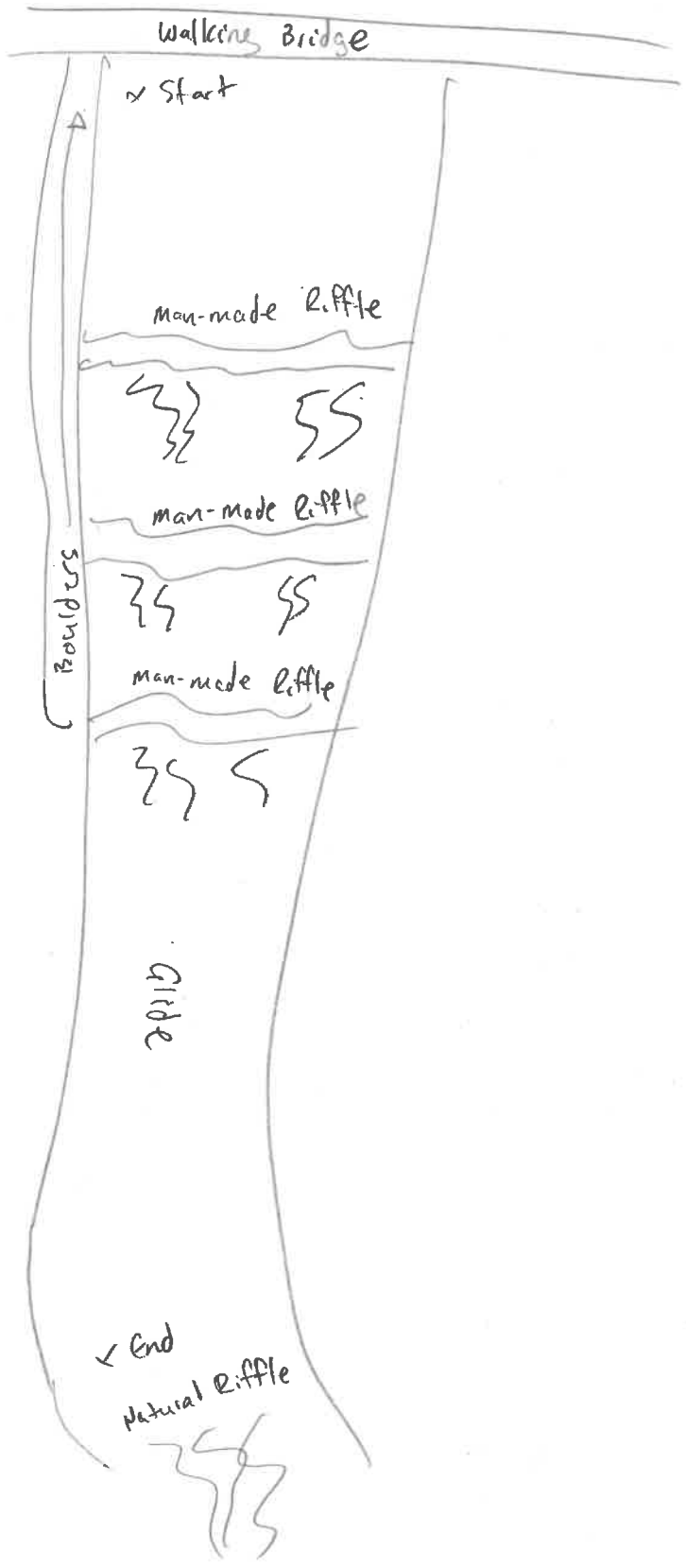
FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



Stream & Location: Oleterey R. Vst. Henderson Rd RM: 7.1 Date: 9/03/2020

River Code: 02-400- STORET #: _____ Lat./Long.: 40.05578 183.02859 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]
<input checked="" type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> NORMAL [0]
<input checked="" type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]
				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> NORMAL [0]
				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
				<input type="checkbox"/> COAL FINES [-2]	

Check ONE (Or 2 & average)

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

Comments _____

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>0</u> UNDERCUT BANKS [1]	<u>1</u> POOLS > 70cm [2]	<u>2</u> OXBOWS, BACKWATERS [1]	AMOUNT
<u>0</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<u>1</u> AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
<u>3</u> SHALLOWS (IN SLOW WATER) [1]	<u>3</u> BOULDERS [1]	<u>1</u> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<u>1</u> ROOTMATS [1]			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments _____

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments _____

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW <5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Indicate predominant land use(s) past 100m riparian.

Comments _____

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	Primary Contact
<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input checked="" type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

Indicate for reach - pools and riffles.

Comments _____

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments _____

6] GRADIENT (2.59 ft/ml) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

DRAINAGE AREA (510 mi²)

%POOL: %GLIDE:

%RUN: %RIFFLE:

Comments _____

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
- WADE
- L. LINE
- OTHER

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st sample pass- 2nd
- < 20 cm
- 20- < 40 cm
- 40- 70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

CANOPY

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

CJ RECREATION

- POOL: > 100R2
- > 3ft

BJAESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURD / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

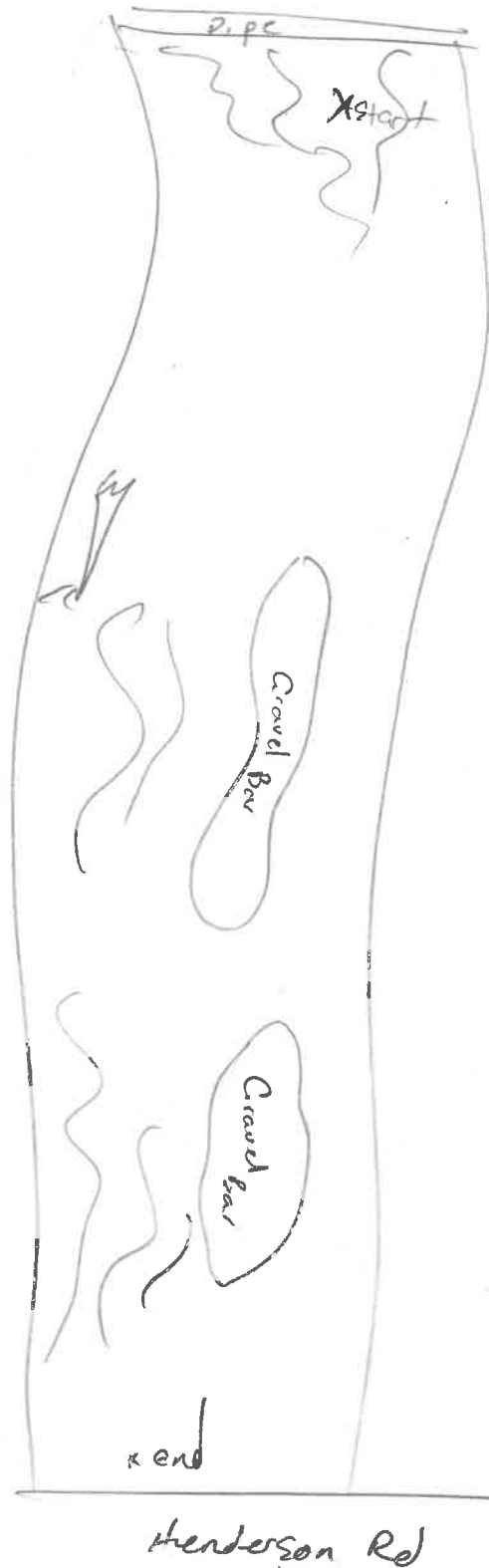
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CQ-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio
- Legacy Tree:*

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



Stream & Location: Oreatony R. @ Northmass Park RM: 5 Date: 9/03/2020

OLN11 Scorers Full Name & Affiliation: MAs River Code: 02-400 STORET#: Lat/Long: 40.0381 183.0286 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, and QUALITY. Includes a 'Substrate' box with the number 10 and a 'Maximum 20' label.

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes an 'Amount' box with the number 15 and a 'Maximum 20' label.

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, and STABILITY. Includes a 'Channel' box with the number 1.6 and a 'Maximum 20' label.

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, and CONSERVATION TILLAGE. Includes a 'Riparian' box with the number 8.75 and a 'Maximum 10' label.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes a 'Recreation Potential' box with 'Primary Contact' and 'Secondary Contact' options, and a 'Pool / Current' box with the number 1 and a 'Maximum 12' label.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, and RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' box with the number 0 and a 'Maximum 8' label.

6) GRADIENT (2.59 ft/mi) DRAINAGE AREA (524 m2). Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. Includes a 'Gradient' box with the number 6 and a 'Maximum 10' label.

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

A) SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st-sample pass-- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

CLARITY

- 1st-sample pass-- 2nd
- < 20 cm
 - 20-40 cm
 - 40-70 cm
 - > 70 cm/ CTB
 - SECCHI DEPTH

meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

1st _____ cm
2nd _____ cm

C) RECREATION

AREA DEPTH
POOL: >100ft² >3ft

B) AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

D) MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

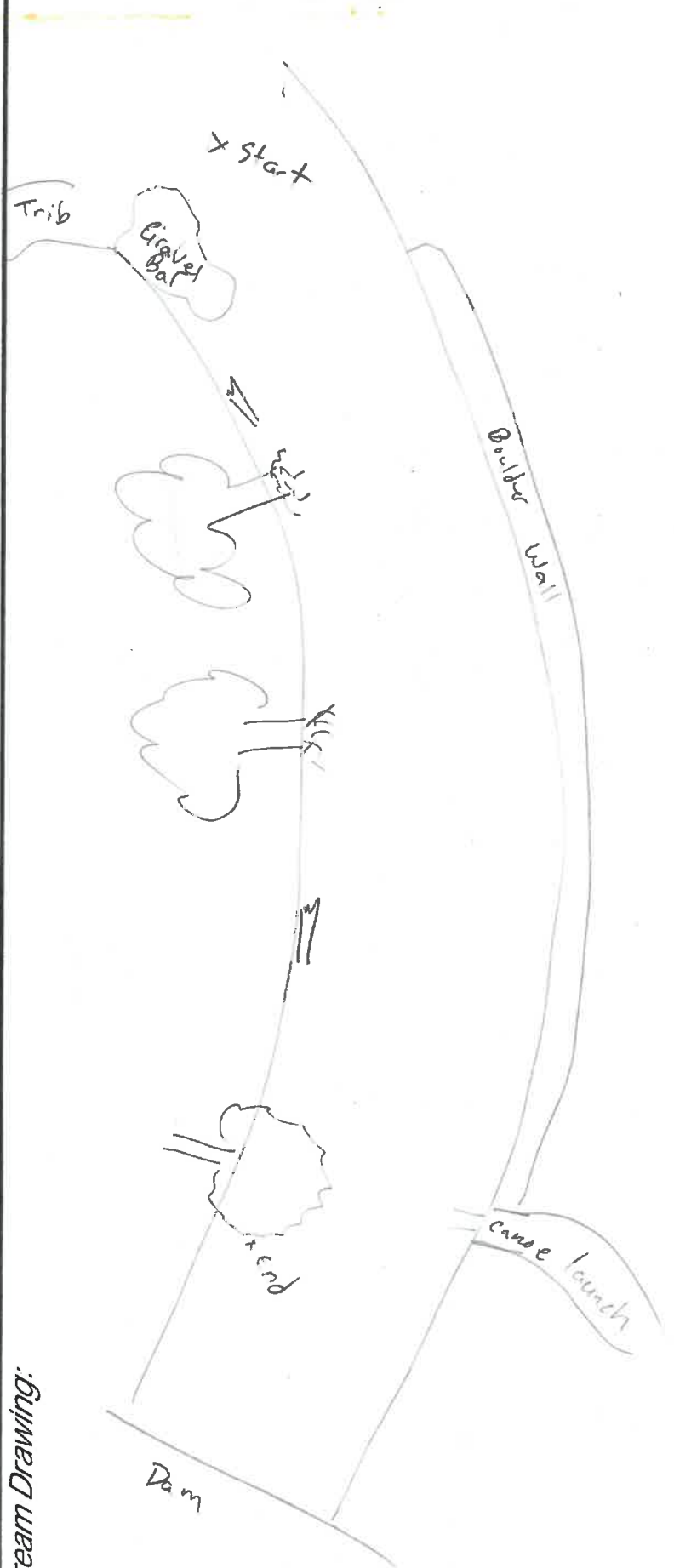
E) ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- \bar{x} width
 - \bar{x} depth
 - max. depth
 - \bar{x} bankfull width
 - bankfull \bar{x} depth
 - W/D ratio
 - bankfull max. depth
 - floodprone \bar{x}^2 width
 - entrench. ratio
- Legacy Tree:

Stream Drawing:



Stream & Location: Olentangy R. Ust DadrIDGE Dam RM: 4.45 Date: 9/14/2020

OLN12 Scorers Full Name & Affiliation: MAS MBT River Code: 02-400 STORET #: Lat/Long: 40.02177 183.01922 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BLDR/SLABS [10], BOULDER [9], COBBLE [8], GRAVEL [7], SAND [6], BEDROCK [5]. OTHER TYPES: HARDPAN [4], DETRITUS [3], MUCK [2], SILT [2], ARTIFICIAL [0]. ORIGIN: LIMESTONE [1], SILLS [1], WETLANDS [0], HARDPAN [0], SANDSTONE [0], RIP/RAP [0], LACUSTURINE [0], SHALE [-1], COAL FINES [-2]. QUALITY: HEAVY [-2], MODERATE [-1], NORMAL [0], FREE [1], EXTENSIVE [-2], MODERATE [-1], NORMAL [0], NONE [1].

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75% [1], MODERATE 25-75% [7], SPARSE 5-<25% [3], NEARLY ABSENT <5% [1]. UNDERCUT BANKS [1], OVERHANGING VEGETATION [1], SHALLOWS (IN SLOW WATER) [1], ROOTMATS [1]. POOLS > 70cm [2], ROOTWADS [1], BOULDERS [1]. OXBOWS, BACKWATERS [1], AQUATIC MACROPHYTES [1], LOGS OR WOODY DEBRIS [1].

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH [4], MODERATE [3], LOW [2], NONE [1]. DEVELOPMENT: EXCELLENT [7], GOOD [5], FAIR [3], POOR [1]. CHANNELIZATION: NONE [6], RECOVERED [4], RECOVERING [3], RECENT OR NO RECOVERY [1]. STABILITY: HIGH [3], MODERATE [2], LOW [1].

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION: NONE/LITTLE [3], MODERATE [2], HEAVY/SEVERE [1]. RIPARIAN WIDTH: WIDE > 50m [4], MODERATE 10-50m [3], NARROW 5-10m [2], VERY NARROW < 5m [1], NONE [0]. FLOOD PLAIN QUALITY: FOREST, SWAMP [3], SHRUB OR OLD FIELD [2], RESIDENTIAL, PARK, NEW FIELD [1], FENCED PASTURE [1], OPEN PASTURE, ROWCROP [0]. CONSERVATION TILLAGE [1], URBAN OR INDUSTRIAL [0], MINING / CONSTRUCTION [0].

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m [6], 0.7-<1m [4], 0.4-<0.7m [2], 0.2-<0.4m [1], < 0.2m [0]. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH [2], POOL WIDTH = RIFFLE WIDTH [1], POOL WIDTH < RIFFLE WIDTH [0]. CURRENT VELOCITY: TORRENTIAL [-1], SLOW [1], VERY FAST [1], INTERSTITIAL [-1], FAST [1], INTERMITTENT [-2], MODERATE [1], EDDIES [1]. Recreation Potential: Primary Contact, Secondary Contact. Pool/Current Maximum 12.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH: BEST AREAS > 10cm [2], BEST AREAS 5-10cm [1], BEST AREAS < 5cm [metric=0]. RUN DEPTH: MAXIMUM > 50cm [2], MAXIMUM < 50cm [1]. RIFFLE / RUN SUBSTRATE: STABLE [2], MOD. STABLE [1], UNSTABLE [0]. RIFFLE / RUN EMBEDDEDNESS: NONE [2], LOW [1], MODERATE [0], EXTENSIVE [-1].

6] GRADIENT (2.59 ft/ml) DRAINAGE AREA (52.9 mi2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL: %GLIDE: %RUN: %RIFFLE: Gradient Maximum 10.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- BOAT
 - WADE
 - L. LINE
 - OTHER
- STAGE**
- 1st-sample pass-- 2nd
 - HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

DISTANCE

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- 0.2 Km
- 0.15 Km
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CLARITY

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- < 20 cm
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meters

CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

- 1st _____ cm
- 2nd _____ cm

C/ RECREATION

AREA DEPTH
POOL: >100ft? >3ft

B/ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SGUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/ISSOs/OUTFALLS

D/ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED
- DESICCATED
- FLOOD CONTROL / DRAINAGE

E/ ISSUES

- WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON
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F/ MEASUREMENTS

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- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:

