

Olentangy River Watershed TMDLs

Appendix C: Use Attainment Status

Appendix C contains the summary table of use attainment status and causes and sources of impairment from the *Biological and Water Quality Study of the Olentangy River, Whetstone Creek and Select Tributaries , 2003-2004*. The report was prepared by the Ohio EPA Division of Surface Water in 2005 (document EAS/2005-12-6).

Table 2. Aquatic life use attainment status for stations sampled in the Olentangy River basin based on data collected July-October 2003. Data collected in 2004 is indicated by the value being in *italics*. Mix zone samples are in **bold** and are listed simply to indicate biological response to effluent discharge. Sites in non attainment are also in **bold**. The Index of Biotic Integrity (IBI), Modified Index of well being (MIwb), and Invertebrate Community Index (ICI) are scores based on the performance of the biotic community. The Qualitative Habitat Evaluation Index (QHEI) is a measure of the ability of the physical habitat to support a biotic community. Threats to water quality identified during the course of the study are listed under Causes and Sources.

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Olentangy River		<i>WWH</i>					
89.3 ^H /89.3	49	NA	MG ^{ns}	84.0	FULL	Low DO and possible undocumented spills ¹	Upstream package plants and possible undocumented spills ¹
86.1 ^H /86.1	38 ^{ns}	NA	34 ^{ns}	58.5	FULL		
86.0/85.94 Mix Zone	24		LowF/P			Fish avoidance response Toxicity to invertebrates	Galion WWTP
85.9 ^H /--	38 ^{ns}	NA	-	79.0	(FULL)		
85.2 ^H /84.5	37 ^{ns}	NA	46	82.5	FULL		
79.7 ^W /79.7	34*	7.8 ^{ns}	42	69.5	PARTIAL	Nutrients, cadmium('94) and siltation	Galion WWTP and agricultural activities (cattle in stream)
74.0 ^W /74.0	40	7.2*	Low F*	57.5	PARTIAL	Siltation, channelization	Agricultural activities
68.1 ^W /68.0	33*	7.7*	30*	58.0	NON	Nutrients, siltation and habitat alteration	Livestock in stream, riparian cover removal
63.4 ^W /63.5	45	7.3*	40	57.5	PARTIAL	Nutrient enrichment, Siltation	Agricultural activities
56.6 ^W /58.8	38 ^{ns}	6.9*	44	37.0	PARTIAL	Siltation, Habitat alteration, Nutrient enrichment	Livestock in stream
54.8 ^W /54.7	36 ^{ns}	7.3*	VG	77.5	PARTIAL	Nutrient enrichment, Siltation	Lack of centralized wastewater treatment in Claridon

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Olentangy River (continued)			<i>WWH</i>				
50.1 ^W /50.3	38 ^{ns}	8.2 ^{ns}	48	84.5	FULL		
45.5 ^W /45.5	40	8.0 ^{ns}	52	84.5	FULL		
40.8 ^B /41.0	35*	7.8 ^{ns}	46	64.0	PARTIAL	Impounded, Siltation	Delaware Dam
32.1 ^B /32.1	42	10.2	40	66.0	FULL		
28.1 ^W /28.2	36 ^{ns}	6.2*	28*	55.5	PARTIAL	Impounded, Siltation	Panhandle Road Dam
27.5 ^W /27.4	40	8.1 ^{ns}	44	76.5	FULL		
24.5 ^W /24.5	42	9.1	50	75.5	FULL		
			<i>EWH</i>				
19.4 ^W /19.5	45*	9.0 ^{ns}	50	89.0	PARTIAL	Nutrient enrichment, Siltation	Urbanization
15.0 ^W /14.9	46 ^{ns}	9.1 ^{ns}	46	81.5	FULL		
12.4 ^B /13.2	50	9.9	50	72.5	FULL		
			<i>WWH</i>				
7.8 ^W /7.3	48 ^{ns}	9.1 ^{ns}	48	83.0	FULL		
3.9 ^B /4.0	50	10.3	44	71.0	FULL		
			<i>MWH</i>				
2.1 ^B /2.1	38	7.5	10*	32.5	NON	Flow alteration	Impoundment
			<i>WWH</i>				
1.8 ^W /1.8	45	7.1*	40	76.0	PARTIAL	Nutrient enrichment	CSOs, urban runoff

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Olentangy River (continued)		<i>WWH</i>					
0.9 ^B /0.6	40	9.0	40	78.5	FULL		
Rocky Fork (RM 84.84)		<i>Undesignated / WWH Recommended</i>					
2.9 ^H /2.9	36 ^{ns}	NA	MG ^{ns}	74.0	FULL		
0.4 ^H /0.4	34*	NA	<u>P</u> *	75.0	NON	Channel modifications, flow alteration from reservoir and nutrient enrichment	Below Ammans PWS reservoir
Mud Run (RM 62.44)		<i>MWH</i>					
6.7 ^H /6.7	30	NA	F	35.0	FULL	Channelization, Siltation	Maintained by County Engineer, Agricultural activities
2.7 ^H /2.6	40	NA	MG	38.0	FULL	Channelization	Maintained by County Engineer
Flat Run (RM 59.28)		<i>WWH</i>					
12.6 ^H /12.7	42	NA	G	57.0	FULL		
7.3 ^H /7.3	49	NA	E	85.0	FULL		
0.6 ^W /0.6	50	9.1	52	72.5	FULL		
Thorn Run (Tributary to Flat Run RM 0.56)		<i>WWH</i>					
1.1 ^H /1.1	42	NA	MG ^{ns}	58.5	FULL	Channel modifications, Embeddedness	Agricultural activities
Bee Run (RM 57.6)		<i>Undesignated / WWH Recommended</i>					
4.9 ^H /2.4	38 ^{ns}	NA	Low F*	33.0	PARTIAL	Siltation, nutrient enrichment Channel modifications	No buffers, historically maintained Agricultural activities

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Bee Run (RM 57.6)	<i>Undesignated / WWH Recommended</i>						
0.3 ^H /0.3	38 ^{ns}	NA	F*	59.0	PARTIAL	Siltation	
Otter Creek (RM 55.42)	<i>WWH</i>						
1.1 ^H /1.1	38 ^{ns}	NA	MG ^{ns}	44.0	FULL	Channel modifications	
Grave Creek (RM 45.35)	<i>MWH</i>						
3.2 ^H /3.2	28	NA	P*	42.0	NON	Channelization, Nutrient enrichment	Maintained by County Engineer
						<i>WWH</i>	
1.4 ^H /1.4	31*	NA	F*	44.5	NON	Channelization	Marion WWTP, Maintained by County Engineer
0.8/0.1	39 ^{ns}	7.4*	48	81.0	PARTIAL	Nutrient enrichment	Failing on-site wastewater systems
Riffle Creek (Tributary to Grave Creek RM 0.21)	<i>MWH</i>						
4.4 ^H /4.4	<u>26</u>	NA	F	34.5	FULL	Channelization, Siltation	Maintained by County Engineer
						<i>WWH</i>	
1.4 ^H /1.4	31*	NA	MG ^{ns}	53.5	PARTIAL	Siltation, habitat alteration	Agricultural activities with historical channelization
QuQua Creek (RM 41.32)	<i>MWH</i>						
4.6 ^H /4.6	<u>22</u> *	NA	Low F*	29.0	NON	Channelization, nutrient enrichment	Marion County Petitioned Stream
						<i>WWH</i>	
0.1 ^H /0.2	44	NA	F*	75.0	PARTIAL	Nutrient enrichment	

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Brondige Run (RM 38.13) WWH							
--/0.6	--	NA	F*	73.5	NON	Nutrient enrichment, siltation, impounded	Agricultural activities, Delaware Dam
Whetstone Creek (RM 36.07) EWH							
30.5 ^H /30.5	50	NA	F*	78.5	PARTIAL	Nutrient enrichment, elevated temp. (25.0C)	Candlewood Lake and associated housing
29.3 ^H /29.3	43*	NA	MG*	73.0	NON	Nutrient enrichment	Candlewood Lake WWTP
28.1 ^H /28.1	48	NA	E	80.0	FULL		
25.5 ^W /25.5	46 ^{ns}	9.0 ^{ns}	52	74.5	FULL		
22.4 ^W /22.4	50	9.0 ^{ns}	48	72.0	FULL		
21.7 ^W /21.8	50	8.1*	50	66.5	PARTIAL	Natural?	MIwb influenced by abnormal seasonal rainfall?
21.6/21.58 Mix Zone	36	6.0	MG/ MG			Fish avoidance response	Avoidance of effluent discharged from Mt. Gilead WWTP
21.5 ^W /21.5	41*	8.6*	46	68.0	PARTIAL	Nutrient enrichment	Mt. Gilead WWTP
18.2 ^W /18.3	54	8.6*	40*	72.5	PARTIAL	Embedded substrates	
13.65/13.68 Mix Zone	46/28	9.1/ 6.5	MG/F			Fish avoidance response during higher stream flow	Effluent discharged to flow upst. which speeds dilution at low flow; not effective during higher flows.
13.5 ^W /12.8	45*	8.4*	52	64.5	PARTIAL	Nutrient enrichment, poor riparian corridor	Cardington WWTP, historical urbanization
9.2 ^W /9.0	40*	8.8*	50	69.5	PARTIAL	Nutrient enrichment	Agricultural activities, livestock in stream

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Whetstone Creek (RM 36.07) EWH							
2.6 ^B /2.7	36*	8.7*	56	61.5	PARTIAL	Siltation, Impounded	Delaware Reservoir
Tributary to Whetstone Creek RM 33.71 Undesignated / WWH and CWH Recommended							
0.4 ^H /0.4	40	NA	F*	56.5	PARTIAL	Agricultural runoff	Agricultural activities
E. Branch Whetstone Creek (Tributary to Whetstone Creek RM 28.29) WWH/ Recommended CWH in addition to WWH							
0.4 ^H /0.4	45	NA	E	78.0	FULL		
Sams Creek (Tributary to Whetstone Creek RM 23.30) WWH							
1.4 ^H /1.4	44	NA	E	66.5	FULL		
Big Run (Tributary to Whetstone Creek RM 12.75) WWH							
0.1 ^H /0.1	34*	NA	Low F*	64.0	NON	Siltation, Upstream channel modifications	Agricultural impacts exacerbated by intermittent stream flow
Shaw Creek (Tributary to Whetstone Creek RM 8.47) WWH							
13.2 ^H /13.2	40	NA	G	39.5	FULL	Channel modifications, Nutrient enrichment	
10.6 ^H /10.6	38 ^{ns}	NA	MG ^{ns}	52.5	FULL	Channel modifications, Nutrient enrichment	
5.2 ^W /5.2	36 ^{ns}	NA	MG ^{ns}	66.0	FULL	Nutrient enrichment, Siltation, Poor riparian cover	Failing on-site wastewater systems, Agricultural activities
1.6 ^W /1.5	38 ^{ns}	8.2 ^{ns}	42	69.5	FULL		
Mitchell Run (Tributary to Whetstone Creek RM 8.1) WWH							
0.2 ^H /0.2	42	NA	MG ^{ns}	72.0	FULL	Nutrient enrichment	Upstream agricultural activities

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Claypole Run (Tributary to Whetstone Creek RM 3.27) WWH							
1.2 ^H /1.2	39 ^{ns}	NA	Low F*	54.0	PARTIAL	Nutrient enrichment, siltation, bacteria	Home on-site wastewater discharges, Channel modifications
Indian Run (RM 35.28) WWH							
0.9 ^H /0.9	36 ^{ns}	NA	MG ^{ns}	69.0	FULL	Nutrient enrichment	Agricultural activities
Norris Run (RM 32.18) WWH							
1.3 ^H /1.3	<u>23</u> *	NA	Low F*	62.0	NON	Habitat alteration, Nutrient enrichment and Siltation	Riparian removal, Urbanization
Sugar Run (RM 26.97) WWH							
1.3 ^H /1.3	29*	NA	Low F*	69.0	NON	Siltation, nutrient enrichment	Urban influences
Mill Run (RM 25.17) WWH							
0.9 ^H /0.7	37 ^{ns}	NA	<u>P</u> *	68.0	NON	Nutrient enrichment	Urban influences
Tributary to Olentangy River RM 20.71 Undesignated / WWH Recommended							
0.2 ^H /0.1	<u>16</u> *	NA	MG ^{ns}	52.5	NON	Isolation, impassable upstream or downstream	Upstream of large waterfall and downstream of several dams
Tributary to the Olentangy River RM 18.19 WWH							
0.1 ^H /0.1	<u>27</u> *	NA	F*	68.0	NON	Nutrient enrichment, bacteria	On-site wastewater systems, urbanization
Deep Run (RM 15.8) WWH							
1.1 ^H /0.5	<u>22</u> *	NA	F*	48.0	NON	Watershed modifications, nutrient enrichment, bacteria	Urbanization

River Mile Fish/Invertebrate	IBI	MIwb ^a	ICI ^b	QHEI	Attainment Status ^c	Causes	Sources
Turkey Run (RM 5.82) <i>WWH</i>							
0.7 ^H /0.7	<u>20</u> *	NA	Low F*	55.0	NON	Nutrient enrichment	Urban runoff, golf course runoff
Wahalla Hollow (RM 4.6) <i>Undesignated / PHWH Recommended</i>							
0.9 ^H /1.0	<u>12</u>	NA	<u>P</u>	57.5	NA	Nutrient enrichment	SSOs, urban runoff
Glen Echo Ravine (RM 4.1) <i>Undesignated / WWH Recommended</i>							
1.0 ^H /0.9	<u>14</u> *	NA	<u>P</u> *	60.0	NON	Nutrient enrichment, bacteria	SSOs, urban runoff