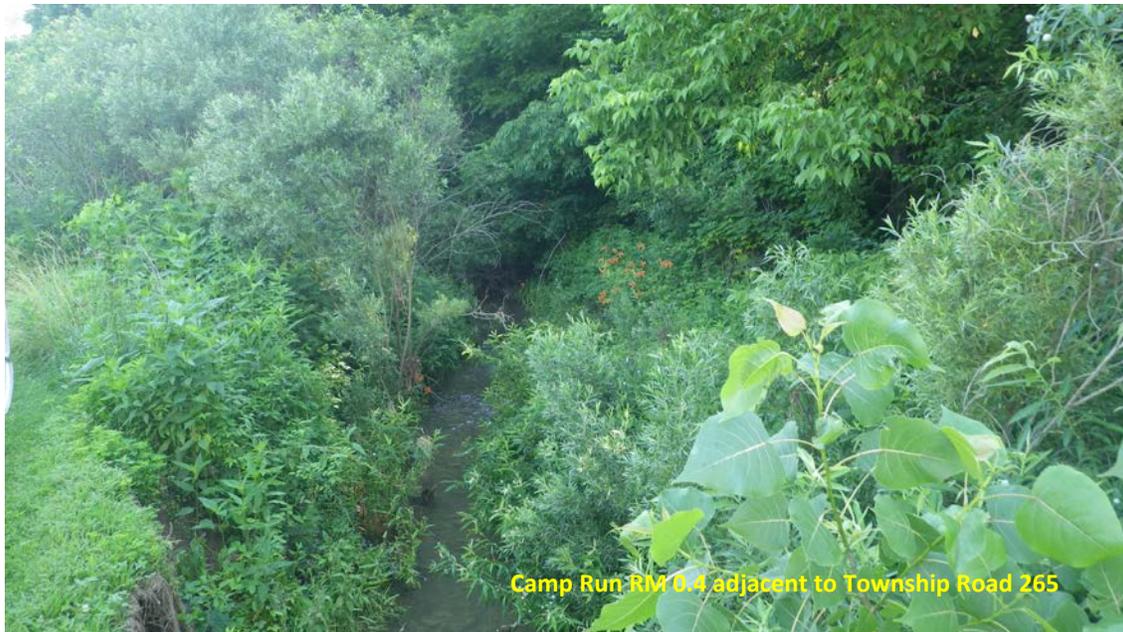




# Beneficial Use Support Document

## Duck Creek Tributaries (2015)



Division of Surface Water  
Ecological Assessment Section  
September 2016

## Recommendations

Four streams in the Duck Creek watershed currently listed as Limited Warmwater Habitat (LWH) in the [Ohio Water Quality Standards](#) (WQS) were surveyed in 2014 and 2015. These streams have never been previously studied; this represented the first scientific assessment of these streams by Ohio EPA. This study used biological and habitat data to evaluate aquatic life use potential for these four streams. Table 1 summarizes the biological and physical habitat results from the survey. Table 2 summarizes the use designation recommendations based on field observations and biological data collected during the survey. Table 3 summarizes the physical habitat characteristics of the streams used to derive the Qualitative Habitat Evaluation Index (QHEI). Significant findings of this survey included the following:

- Camp Run and Rocky Run fully supported the Warmwater Habitat (WWH) biological criteria and are recommended to be designated as such.
- McBride Run is recommended as Exceptional Warmwater Habitat (EWH). This stream was documented to be in full attainment of the EWH biological criteria.
- Wolfpen Run supports both coldwater fish (reidside dace) and several coldwater macroinvertebrate taxa, and is therefore recommended the Coldwater Habitat (CWH) use.

All four streams should retain their currently assigned Primary Contact Recreation use, Agricultural Water Supply and Industrial Water Supply uses.

Table 1. Aquatic life use attainment status for stations sampled in the Duck Creek watershed based on data collected June - October 2014/2015. 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 of the stream to support a biotic community. The Duck Creek watershed is located in the Western Allegheny Plateau (WAP) ecoregion. If biological impairment has occurred, the cause(s) and source(s) of the impairment are noted.

Location	STORET (RM) <sup>a</sup>	DRAIN. (Mi <sup>2</sup> )	IBI	MIwb <sup>b</sup>	ICI <sup>c</sup>	QHEI	Status <sup>d</sup>	Cause(s)	Source(s)
<b>Camp Run (06-325-000) WWH – Recommended</b>									
Adj. TR 265	203993 (0.4)	1.7 <sup>H</sup>	42	-	VG	67.5	Full		
<b>Rocky Run (06-326-000) WWH – Recommended</b>									
Adj. Lee Run Rd	203995 (0.2)	1.6 <sup>H</sup>	50	-	G	57.3	Full		
<b>McBride Run (06-333-000) EWH – Recommended</b>									
Adj. Zerger Quarry Rd	302618 (0.05)	1.6 <sup>H</sup>	46	-	E	56.8	Full		
<b>Wolfpen Run (06-336-000) CWH – Recommended</b>									
adj TR 263	302619 (0.03)	1.1 <sup>H</sup>	38	-	G	46.8	Full		

- a - River Mile (RM) represents the Point of Record (POR) for the station, not the actual sampling RM.
- b - MIwb is not applicable to headwater streams with drainage areas  $\leq 20$  mi<sup>2</sup>.
- c - A narrative evaluation of the qualitative sample based on attributes such as EPT taxa richness, number of sensitive taxa, and community composition was used when quantitative data was not available or considered unreliable E=Exceptional, VG=Very Good, G=Good, MG=Marginally Good, HF=High Fair, F=Fair, LF=Low Fair, P=Poor, VP=Very Poor.
- d - Attainment status is based on the recommended aquatic life use designation.
- B - Boat biocriteria apply; W- Wading biocriteria apply; H- Headwaters biocriterion applies
- ns - Nonsignificant departure from biocriterion ( $\leq 4$  IBI or ICI units, or  $\leq 0.5$  MIwb units).
- \* - Significant departure from WAP biocriterion ( $\leq 39$  IBI,  $\leq 7.8$  MIwb, or  $\leq 30$  ICI); underlined values indicate a narrative biocriterion score of poor or very poor.

Western Allegheny Plateau Biological Criteria					
IBI			MIwb		ICI
Headwater	Wading	Boat	Wading	Boat	All
EWH					
50	50	48	9.4	9.6	46
WWH					
44	44	40	8.4	8.6	36

Table 2. Use designation recommendations for select water bodies in the Duck Creek drainage basin. Designations based on the 1978 and 1985 water quality standards appear as asterisks (\*). A plus symbol (+) indicates confirmation of a current designation and a delta (▲) indicates a new recommended use based on the findings of this study.

Water Body Segment	Use Designations														Comments
	Aquatic Life Habitat							Water Supply			Recreation				
	S R W	W W H	E W H	M W H	S S H	C W H	L R W	P W S	A W S	I W S	B W	P C R	S C R		
Duck creek		+							+	+			+		
Camp run		▲							*/+	*/+			*/+		
Rocky run		▲							*/+	*/+			*/+		
McBride run			▲						*/+	*/+			*/+		
Wolfpen run							▲		*/+	*/+			*/+		

SRW = state resource water; WWH = Warmwater Habitat; EWH = Exceptional Warmwater Habitat; MWH = Modified Warmwater Habitat; SSH = Seasonal Salmonid Habitat; CWH = Coldwater Habitat; LRW = Limited Resource Water; PWS = Public Water Supply; AWS = Agricultural Water Supply; IWS = Industrial Water Supply; BW = Bathing Water; PCR = Primary Contact Recreation; SCR = Secondary Contact Recreation.

