

Ohio EPA Response to Comments
Draft Biological and Water Quality Report – Little Muskingum River
2015 - 2016

The Draft Little Muskingum River, 2015 - 2016 Biological and Water Quality Report was made available for stakeholder review and comment from September 18, 2019 to October 18, 2019. The Agency received comments from Midwest Biodiversity Institute, Inc. (MBI).

Overall/General Comments

Comment 1: The importance of these types of studies to verify existing aquatic life and recreation uses is reinforced by this report in the verification of default aquatic life uses previously assigned in 2000. The report also adds verified uses to previously undesignated streams. Identification of the appropriate and attainable aquatic life use is essential to the balanced protection of water quality in Ohio. The updated table from the Water Quality Standards shows however a significant number of tributaries (23) still with unverified, mostly WWH aquatic life uses even though most of the verified uses are EWH, CWH, or EWH/CWH. This could be a concern if a new discharger or modification (401 permits) change is proposed on one of these streams. Given the near universal designations of streams as EWH, CWH, or EWH/CWH it might be prudent to change the aquatic life use in these streams as EWH but leave them as unverified for now. This is also concerning because future proposed monitoring efforts will be at lower densities than this survey in the State's new "Two Pronged" monitoring strategy and the likelihood of these sites being assessed is very low.

Response 1: One of the important objectives of Ohio's biological surveys has always been to assess waters that are undesignated or that carry unverified aquatic life use designations to ensure the appropriate protections to preserve water quality. The 2015 survey will reduce the proportion of streams/stream segments that currently carry an unverified aquatic life use designation from half down to about a third once the recommendations are codified into Ohio's WQS. With fewer remaining streams having an unverified designation, it will be easier to target the remainder in future surveys. We are seeing this in many parts of the State. Since the remaining unverified streams are relatively small, some will probably be included as part of the upcoming statewide headwaters survey scheduled for 2021. Also, these streams will likely need only a single site and a single pass to assess them given their smaller size. Aside from these observations, it is noteworthy that this watershed is very rural with low populations and low growth, and that much of the land is publicly held. It is unlikely that new or expanding dischargers will occur soon. However, several mechanisms exist to ensure protection, including antidegradation, Section 401 reviews, and the requirement to protect downstream uses.

Comment 2: We also have some questions about the rationale of not including or selecting the EWH use when some CWH or WWH uses were assigned. The attached Table 1 show the Little Muskingum Tributaries where CWH or WWH was recommended when they were also in full EWH attainment. Among the 13 streams, the Clear Fork WWH recommendation had documented problems related to livestock access. However, the

remainder fully meet EWH standards, with either both index scores Exceptional or only one within non-significant departure from the criteria (i.e., the Very Good range). The report text and Recommendations section do not clearly explain the rationale for choosing CWH and WWH but not EWH. Criteria for assigning the dual, CWH/EWH designation is discussed on pages 57 and 58 but, depending on interpretation, many of streams in Table 1 could still fit the *“exceptional fish and macroinvertebrate communities, as expressed by the IBI and ICI, and good to excellent habitat”* described in the report. Regardless of the final aquatic life use determinations for these streams, their consistent, near exceptional performance reinforces the observations of pervasive, exceptional quality throughout the watershed.

Response 2: The data has been re-evaluated and changes to ALU recommendations have been made where warranted. These changes are summarized in Table 1, below.

Comment 3: The new method to identify CWH uses seems to be more driven by temperature data than by biological performance which is a substantial change from previous methods. The major difference is in the much higher requirements for Coldwater macroinvertebrate taxa (9 vs. 4 coldwater taxa) where temperature data is not available or where sites do not quite meet the temperature criteria of < 70 degrees over a 28-day period (July 1 – Aug 31). Our concern is that streams with high numbers of coldwater taxa (5-8), but slightly warmwater water than the continuous threshold may not be protecting of their existing uses using the WWH temperature criteria and other criteria difference that may differ among these aquatic life use classes. In the Little Muskingum River the “non-coldwater” streams only show slightly more temperature exceedances (3.5% vs 1.7%) of the upper coldwater limit of 24C for coldwater fish. Table 19 should include the WWH stream data so the user can see the differences between the CWH and WWH designated streams.

Response 3: The existing CWH rule was used when recommending Aquatic Life Uses for this survey. Temperature data is only being used in a supportive role, and all temperature data collected for the survey are summarized in Table 19.

Comment 4: The Little Muskingum River watershed is clearly one of highest quality watersheds in Ohio and also has had a diverse assemblage of freshwater mussels. Given the tremendous decline of mussels over the past decades across the US, a short summary of the status of this group should be presented. Hoggarth (2000) conducted a survey in 1999-2000 that could form a baseline along with the Ohio EPA qualitative sample data. High quality watersheds such as the Little Muskingum River need to be scheduled on a sufficiently recurring basis to ensure protection efforts are working. Overall, this particular report exemplifies all of the excellent qualities that have become an expected output of the Ohio EPA surface water.

Response 4: The TSD lists the mussel species and locations where Ohio EPA’s biologists observed them as part of the 2015 survey within Table 17. Table 18 contains a list of mussels and the locations at which they were found during the 1999-2000 mussel survey that was referenced in the comment. We do not think it would be appropriate to provide much in

the way of comparative analysis in our report since the methods used by Ohio EPA are very different than those used in the 1999-2000 survey.

Comment 5: We again suggest that it would better serve the needs of interested parties to be able to download all of the pertinent data used in this study from the Ohio EPA web site including raw and summarized biological data, QHEI data, water column chemistry and sediment chemistry data, and continuous (DataSonde) data. While the TSD was accompanied by comprehensive appendices, it would be far more effective for a user to have the opportunity to perform electronic searches and conduct their own analyses if they so choose. We do appreciate past responses to this comment about the agency working to make this happen.

Response 5: Biological, habitat, and chemistry data for the survey were available for download on the Agency website alongside the draft TSD <https://epa.ohio.gov/dsw/wq>. Due to the large file size, continuous (sonde) data are still only available upon request.

Comment 6: p. 8 A few of the designations verifying a WWH aquatic life use are a bit unclear. Lower Rich Fork and Wingett Run make sense because there are MIwb scores (Rich Fork 8.5) or IBI scores (Wingett Run, IBI = 44) that do not achieve the EWH goal. Others however, such as Indian Run with a 52 IBI score and 'E' narrative bug rating, do not make any sense. The EWH designation is clearly warranted.

Response 6: See Response 2 and Table 1, below.

Comment 7: p. 29 Given the possibility of legacy mining and oil extraction impacts, it would have been nice to see some more detailed analysis of chloride and TDS data as a baseline. We looked at the data appendix and for the most part all of these variables with some minor exceptions were very low. A more detailed assessment would be useful beyond an exceedance table since the WQ criteria for TDS (1500 mg/L ~ 2400 uS/cm) is not protective of aquatic life. It would be a useful section for any of the watersheds in the Southeast region of Ohio.

Response 7: The scope of the survey was to assess the current beneficial uses and verify the appropriateness of existing, unverified, and beneficial use designations. Since chloride and TDS were not impacting aquatic life in the watershed, a detailed analysis was not warranted. All data from this survey and previous surveys across the state are publicly available upon request for use in a more detailed analysis.

Comment 8: p. 38 Station code C01K60 refers to Bear Run RM 0.1 in other sections of the report but is listed as Sycamore Creek RM 0.1 in the fish table (Table 13). Bear Run is listed in Table 13 as Station code 303328.

Response 8: Thank you, this has been fixed.

Comment 9: p. 39 Station code C01K52 refers to Moss Run in other sections of the report but is listed as Eightmile Creek RM 0.1 in the fish table.

Response 9: Thank you, this has been fixed.

Reference Table 1:

Stream	Stream Code	River Mile	DA	Recomm- ended Use	Index Scores IBI / ICI / QHEI	EWH Attain- ment	Includes VG/ns departure from EWH score(s)	Change in use recomm- endation
Laurel Run	06-458-003	0.1	1.1	CWH	48 ^{ns} / E / 60.5	FULL	YES (1)	EWH and CWH
Willison Run	06-458-001	0.3	1.7	CWH	46 ^{ns} / E / 57	FULL	YES (1)	EWH and CWH
Left Prong Rich Fork	06-452-000	0.1	4	CWH	56 / VG / 68.8	FULL	YES (1)	EWH and CWH
Brister Fork	06-453-000	0.1	3.0	CWH	48 ^{ns} / E / 68.8	FULL	YES (1)	EWH and CWH
Wolfpen Run	06-457-000	0.3	3.3	CWH	46 ^{ns} / E / 61	FULL	YES (1)	EWH and CWH
Buhrs Run	06-456-000	0.2	2	CWH	46 ^{ns} / E / 77.5	FULL	YES (1)	EWH and CWH
Whitten Fk (upper)	06-440-000	9.2	4.9	CWH	46 ^{ns} / E / 73	FULL	YES (1)	EWH and CWH
Whitten Fk (upper)	06-440-000	7.2	8.9	CWH	56 / E / 79	FULL	NO	EWH and CWH
Browns Run	06-429-000	0.2	2.8	CWH	52 / E / 67.25	FULL	NO	EWH and CWH
Clear Fork	06-430-000	23.3	5.0	WWH	48 ^{ns} / E / 69	FULL	YES (1)	
Clear Fork	06-430-000	20.8	9.9	WWH	44* / E / 63.5	PARTIAL	-- (Good* IBI)	
Clear Fork	06-430-000	13.7	19.4	WWH	48 ^{ns} / E / 64.5	FULL	YES (1)	
Clear Fork	06-430-000	0.1	48	WWH	48 ^{ns} / 9.2 ^{ns} / VG ^{ns} /	FULL	YES (3)	
Indian Run	06-433-000	0.1	5.8	WWH	52 / E / 52	FULL	NO	EWH
Little Indian Run	06-433-001	0.1	2.0	CWH	50 / E / 56	FULL	NO	EWH and CWH
Hog Run	06-415-000	0.2	0.8	CWH	54 / E / 55.75	FULL	NO	EWH and CWH

Stream	Stream Code	River Mile	DA	Recommended Use	Index Scores IBI / ICI / QHEI	EWH Attainment	Includes VG/ns departure from EWH score(s)	Change in use recommendation
Moss Run	06-408-000	0.1	4.6	WWH	48 ^{ns} /E /50.75	FULL	YES (1)	EWH

End of Response to Comments