

Ohio EPA Response to Comments
Draft Biological and Water Quality Report – Minor Great Black Swamp Tributaries
July 2020

The Draft Minor Great Black Swamp Tributaries Biological and Water Quality Report was made available for stakeholder review and comment from May 28, 2020 to June 29, 2020. The Agency received comments from the Midwest Biodiversity Institute.

The comments are summarized and grouped into categories with the name of the commenter following the comment in parenthesis.

Overall/General Comments

Comment 1: The Fact Sheet provided along with the draft report was informative and concise, but we will repeat a previously made comment about the need to explicitly state the three principal objectives of this type of assessment in each and every fact sheet:

- 1. Establish the attainable aquatic life use as codified in the Ohio WQS;**
- 2. Determine the status of individual river and stream sampling locations in terms of attainment and non-attainment of the Ohio WQS; and,**
- 3. Document any changes through time including a time series of changes in study areas with multiple years of assessment.**

Doing this reminds less informed readers that getting number 1 correct affects the accuracy of number 2. It also shows that the agency is still committed to properly executing the salient provisions of the Ohio WQS and communicating the effectiveness of their CWA programs that have positively affected the status of aquatic life uses over the past 40 years. Providing a summary of the beneficial use designation recommendations would be a helpful addition to the fact sheet although we recognize that this has also been done at the time use changes are recommended. It would not hurt to include it in both given the time difference between the production of a TSD and the eventual rulemaking proposal.

Response 1: Ohio EPA agrees that inclusion of the principal objectives of the assessments would be a beneficial addition to the fact sheet for the reasons stated in the comment and will include them in future versions as requested. Regarding the use designation revision summary, we would prefer to keep this information within the fact sheets developed for the use designation rulemakings. In some cases, there may be a lot of revisions or new additions that could make the TSD fact sheet much longer than it is intended to be. We can consider adding a reference to the TSD fact sheet that specifies where this information is located in the TSD report. Also, it is our goal to close the time gap between the publication of the TSD and the rulemaking process so that these events are more synchronized.

Comment 2: Overall, this report reflects the execution of a comprehensive monitoring and assessment program that brings the information to the program level and is only possible because of the intensive pollution survey design, site density, and strength and breadth of indicators that are employed. We have previously stated the importance of maintaining this design and will not repeat that in detail here in the interest of being as concise as possible. However, our previously stated concerns and

comments remain. One question this raises is would the degree of improvement revealed by the 2105-16 assessment have been revealed by the reduced sampling site density being proposed under the new Two-Pronged approach? We have serious doubts that it would and encourage the agency to more thoroughly analyze these risks than has apparently been done to date. The new Two-Pronged approach will result in a reduction of sampling site density in future surveys which if applied in 2015-16 would have resulted in a much less informative assessment. The 2015-16 survey will hopefully result in some very specific restoration actions in certain impaired streams and reaches, but which would have likely gone undetected under a less dense survey design. Most restoration projects now require site-specific data as a basis for finding support. Given the relative cost of restoration (expensive) to monitoring (relatively cheap), it is prudent to continue to have monitoring data serve as the basis for restoration project funding and prioritization. We are concerned that the reduction in sampling will result in assessments that are too coarse to meet site-specific demands.

Response 2: The sample size needed to detect a specified level of change can be estimated based on the mean and variability observed from prior survey scores. For 36 project areas previous visited, bootstrap sampling shows that in most cases, resampling 60 sites (randomly chosen) would detect a difference of +/-2 IBI points with 95% confidence.

Comment 3: The report does a good job summarizing the conditions and causes and sources of impairment in the study area. The improvements were surprising given the historically modified channel conditions and the widespread impairment in this portion of the HELP ecoregion. The HELP ecoregion biocriteria were originally developed as a “best attainable” threshold (based on 1980s era data) because “least-impacted” reference sites simply did not exist in this ecoregion. As a result the biocriteria for the IBI and MIwb were set at the 90th percentile of all sites given the widespread extent of nonpoint source and habitat associated impacts and impairments in the HELP ecoregion. It appears that the reduction of sedimentation from improved agricultural practices has contributed in part at least to the observed improvement in biological condition. IBI scores at several sites met the equivalent ECBP biocriterion which is well above the relative lower quality reflected by the HELP biocriterion. This result shows that it is time to re-derive the biocriteria for small streams in the HELP ecoregion. While raising the biocriterion would result in some sites falling out of attainment using the current HELP IBI biocriterion (i.e., 32 vs. 40), but it would be consistent with the definition and intent of existing use as defined at 40CFR Part 131.3[e]. It could also put the widespread nutrient enrichment issues in the Maumee basin into better perspective, especially if making nutrient reductions would result in better biological conditions. As it stands what appear to be out-of-date biocriteria make near-field aquatic life use attainment an “easier” task and further solidifying the prevailing view that nutrients in this basin are predominantly a far-field issue.

Response 3: Ohio EPA agrees that recalibration of the biocriteria should be explored based on the results from this and other recent surveys.

Comment 4: An equally important rationale for re-deriving the biocriteria is that it would elevate the need to incorporate floodplain, riparian, and stream habitat degradation as part of a better integrated strategy for reducing the near-field effects of nutrient runoff while

also addressing reduced nutrient exports to Lake Erie and lacustuaries. Many of the sites including those that attained the current HELP biocriteria had elevated nutrients. This could better align the goals of reducing exports to Lake Erie while improving near-field habitat and biological conditions and also addressing drinking water quality and reducing bacteria levels that remain widespread in the basin.

Response 4: Ohio EPA does not disagree that changing the biocriteria could result in changes in use designations.

Comment 5: Page 1 – Paragraph 3:
General comment – we agree that improvement trends in the fish are more consistent and straightforward than for the macroinvertebrates. Still, the fact that 90% of sites met the macroinvertebrate biocriteria for the currently designated or recommended ALU is impressive given the historically modified landscape and especially when compared to initial biological monitoring results from the 1980s.

Response 5: Ohio EPA agrees that it is impressive that over 90 percent of macroinvertebrate samples met applicable biocriteria, and like the fish, trends were mostly positive. However, we didn't want to overshadow the impairments that were still present in the study area. Ohio EPA has updated the text in this paragraph to suggest that trends were also mostly positive.

Comment 6: Page 8 – Attainment Table 2:
A number of sites sampled in 2015 were re-sampled in 2016 and the later results are presented in brackets. It appears that the attainment status is also based on 2016 sampling, but that is not clear in the attainment table. We suggest bracketing the attainment status if it is based on bracketed 2016 results.

Response 6: The attainment status for the locations re-sampled in 2016 were based on biological collection results from that year. As suggested, Table 2 has been modified to reflect the attainment status based on the 2016 sampling data.

Comment 7: Page 8 – Attainment Table 2:
Nine (9) sampling sites from seven (7) streams are recommended for the MWH use. Historically, qualitative macroinvertebrates from MWH streams evaluated as "Fair" were further assessed as High Fair (HF) and therefore meeting the modified use, or Low Fair (LF*) and not meeting modified use criteria. This protocol is not consistently followed in Table 2 at six (6) of nine (9) sites. To correct the macroinvertebrate listings, the following changes are recommended:

- a. North Creek RM 1.6: Change F to HF
- b. North Creek RM 0.3: Change F* to LF*
- c. South Creek RM 3.7: Change [F] to [HF]
- d. Trib. to Platter Creek: Change F to HF
- e. Dry Creek: Change F to F*
- f. West Branch Tontogany Creek RM 3.42: Change F to HF

g. Liberty Hi Road Ditch: Change [F] to [HF]

h. Haskins Road Ditch: Change F to HF

These changes should also extend to Table 29 (p. 157) in the Macroinvertebrate Section.

Response 7: Both tables have been updated to reflect the different fair categories for stream segments with existing or recommended MWH uses.

Comment 8: Unlike the MWH protocols, Brinkman Ditch RM 2.35 is designated WWH so the “LF*” macroinvertebrate evaluation should be changed to “F*”.

Response 8: The appropriate tables have been updated to reflect this.

Comment 9: General Comment; Table 27 p. 144:

This is an excellent method of presenting historical sampling results for an entire survey in one place. When applicable, the format should be adopted in future basin reports and could be adapted to display other biological, chemical or physical habitat trends.

Response 9: Ohio EPA appreciates the feedback on this. We will consider incorporating similar style tables in future reports.

Comment 10: Page 154/Mayfly photo: Collections of the sensitive mayfly *Acerpenna pygmaea* are justifiably highlighted in the photo as an indicator of higher stream quality in the 2015-16 study area. *A. pygmaea* and *A. macdunni* (also a sensitive species) were found at 69 sites from 58 streams in 2015-16. If it wasn't already considered, it might be illustrative to display the occurrence of the nymphs compared to historical collections in the 1990s; however, taxonomic keys to distinguish the genus *Acerpenna* may well not have been available during the 1980s. EPT taxa richness, sensitive taxa richness, or some other signature taxon might be substituted for the analysis.

Response 10: *Acerpenna* spp. (*A. pygmaea* or *A. macdunoughi*), was the most commonly sampled moderately intolerant mayfly collected during this 2015-16 survey. In this survey *Acerpenna* spp. mayflies were collected in 78% of all samples, a substantial increase from only being collected 21% of all samples during the 1996-97 survey. Also, overall EPT and sensitive taxa totals have increased with improvements over time. The survey work in the 1980's documented an average of 4-5 EPT taxa and 0-1 sensitive taxa per site. The 1996-7 survey average totals were 8-9 EPT and 4 sensitive taxa collected per site. The 2015-16 survey (which included many more small tributaries) average still increased slightly to 9-10 EPT and 4-5 sensitive taxa collected per site.

Comment 11: Page 174 – Last Paragraph: There are two instances of disabled cross reference links (Error! Reference source not found) in the paragraph. Two other links are disabled on pages 100 and 134.

Response 11: The references to these figures have been updated.

Comment 12: The section on stream habitat was well done, but adding an analysis of habitat trends from earlier data would be useful. Looking at the table of habitat metrics it does seem that the substrate metric (scores above 10) were associated with higher IBI scores. Was there an increase in this metric from earlier data?

Response 12: The general lack of paired historical stream data limited certain trend analysis. Habitat metrics and IBI scores from paired location (n=15) in 1996/97 and 2015/16 were evaluated. Both QHEI and IBI scores from paired locations were higher in 2015/16 than in 1996/97. Application of Wilcoxon-Mann-Whiney non-parametric treatment suggest these differences were statistically significant (see table below). The substrate and all other QHEI metrics also trended higher at these locations, some of which were also statistically significant. Some of the differences in QHEI sub-metric scoring may be attributable to slight differences in sampling location (upstream vs. downstream from a bridge), but some improvements are also likely attributable to the substantial positive trend in habitat and biological quality documented throughout the study area.

Metric	1996-97 Ave.	2015-16 Ave.	P value
IBI	27.8	35.4	0.001
QHEI	38.6	48.6	0.01
Substrate	7.3	8.1	0.255
Cover	7.4	10.8	0.013
Channel	9.2	10.8	0.023
Riparian	3.9	4.3	0.43
Pool	4.9	6.7	0.018
Riffle	1.1	2.2	0.007

End of Response to Comments