

West Fork Locust Creek in Missouri
Draft Total Maximum Daily Load (TMDL)
SUMMARY OF COMMENTS AND RESPONSES
Prepared by the Environmental Protection Agency (EPA), Region 7
Water, Wetlands and Pesticides Division
September 2010

INTRODUCTION

EPA public noticed a draft TMDL for West Fork Locust Creek (water body identification MO_0613) from May 25, 2010 to June 25, 2010. EPA is establishing this TMDL to meet the obligations of the 2001 Consent Decree, *American Canoe Association, et al. v. EPA*, Consolidated Case No. 98-482-CV-W, (Consent Decree). This document summarizes and paraphrases comments received, EPA's response to comments and changes made to the final TMDL where appropriate. Included is a list of all commentors.

RESPONSE TO COMMENTS (EPA responses in bold)

Comment: It isn't clear in the TMDL how much nutrients are released during large storm events. Does the TMDL assume that this high flow release is accommodated by the Load Allocation (LA) and Wasteload Allocation (WLA)?

Response: Typically, large rainfall events precipitating a discharge from a no discharge facility coincide with high stream flow occurring less than 5 percent of the time. The critical period for this TMDL is low flow. The impact of discharge, from no discharge facilities, in this watershed, during a large storm event, would not have a significant impact on the median load at critical low flow conditions.

Comment: With the extensive amount of nonpoint source runoff in these systems, an assessment of other contaminants (e.g., pesticides) would be appropriate to ensure protection of the stream biota.

Response: Missouri has the authority to continue to monitor and assess state waters to ensure protection of the designated beneficial uses and EPA encourages the Missouri Department of Natural Resources (MDNR) to do so.

Comment: Since Atrazine use in Missouri is widespread, why isn't it assessed as part of this TMDL? A watershed management plan is needed for West Fork Locust Creek and should be a priority for Clean Water Act (CWA) § 319 Funding. Due to new scientific information, a program to monitor and assess the toxicity of atrazine and other agriculture chemicals is needed.

Response: There is currently no data available to indicate that atrazine is a pollutant for West Fork Locust Creek. Missouri has the authority to continue to monitor and assess state waters to ensure protection of the designated beneficial uses and EPA encourages MDNR to do so. Watershed management and 319 funding may be established by MDNR.

Comment: Why does this TMDL mention the importance of riparian buffers, but doesn't recommend buffers to reduce loading of suspended sediment?

Response: While EPA doesn't establish implementation plans in TMDLs, EPA does agree that riparian habitat conditions have a strong influence on instream water quality and habitat. MDNR may work with the Natural Resources Conservation Service, local university extension offices and the local Soil and Water Conservation District to encourage area land owners to implement these practices (Appendix E of the TMDL).

Comment: Until such time as the CWA 303(d) List is amended to identify a pollutant for this water, it is premature and unlawful to proceed with the development and implementation of a TMDL. EPA based the listing on very limited macro invertebrate data.

Response: While West Fork Locust Creek was listed on the 2008 303(d) List as impaired by unknown pollutants, elevated sediment and nutrients have been identified, based on a stressor identification study, as the leading cause that degrades stream habitats and affects aquatic life. As a result, the TMDL is written to address impairment by nutrient enrichment and sedimentation. A TMDL is being developed for this water under the requirements found at 40 CFR 130.7 (and specifically 40 CFR 130.7(c)(1)) requiring states to establish TMDLs for waters still requiring TMDLs and in accordance with priority ranking. EPA's regulations state that TMDLs can be expressed in several ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some "other appropriate measure." 40 CFR § 130.2(i). They also state that TMDLs may be established using a biomonitoring approach as an alternative to the pollutant-by-pollutant approach. 40 CFR § 130.7(c)(1).

Comment: The EPA should conduct more macro invertebrate monitoring data to determine if the creek is truly impaired. The study could try to determine if any impairment of aquatic life is affected by total suspended solids (TSS), total nitrogen (TN) or total phosphorus (TP). Also, EPA should collect more macro invertebrate data before drafting a TMDL.

Response: Because of channelization, high turbidity values were often recorded at the sampling sites on this stream. In addition, the appearance of excessive filamentous algae was observed indicating that nutrients are also contributing to the degradation of this stream. A TMDL is being developed for this water under the requirements found at 40 CFR 130.7 (and specifically 40 CFR 130.7(c)(1)) requiring states to establish TMDLs for waters still requiring TMDLs and in accordance with priority ranking. EPA's regulations state that TMDLs can be expressed in several ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some "other appropriate measure." 40 CFR § 130.2(i). They also state that TMDLs may be established using a biomonitoring approach as an alternative to the pollutant-by-pollutant approach. 40 CFR § 130.7(c)(1). See Section 4 of the Draft TMDL for further discussion of state and federal regulations and authorities. The TMDL also references EPA's 2006 Framework for Developing Suspended and Bedded Sediments Water Quality Criteria. Missouri has the authority to continue to monitor and assess state waters to ensure protection of the designated beneficial uses and EPA encourages MDNR to do so. Missouri may submit and EPA may approve a revised or modified TMDL for this water at any time.

Comment: Should storm water discharges be included in LA or WLA?

Response: The WLAs and LAs are to be expressed in numeric form in the TMDL. See 40 CFR § 130.2(h) & (i). EPA expects TMDL authorities to make separate allocations to NPDES-regulated storm water discharges (in the form of WLAs) and unregulated storm water (in the form of LAs). National Pollutant Discharge Elimination System (NPDES)-regulated storm water discharges must be addressed by the WLA component of a TMDL. See 40 CFR § 130.2(h).

Comment: Since habitat impairment is not a pollutant, EPA should not be writing and implementing a TMDL for a non-pollutant. EPA must identify which portion of the impairment is caused by a pollutant and which portion of the impairment is caused by poor habitat or non-pollutants. Any resulting WLA or LA in a TMDL should only address the pollutant portion of the impairment.

Response: The TMDL targets impairment of the General Narrative Criteria by nutrient enrichment and sedimentation. The number one pollutant entering Missouri waters is sediment in addition other pollutants like nitrogen, phosphorus, pathogens and heavy metals are often attached to soil particles and carried into streams with the sediment. A reduction in TSS, TN and TP are required as these pollutants are impairing the General Narrative Criteria pertaining to the protection of aquatic life for the entire length of West Fork Locust Creek segment 613 as listed in Missouri's 2008 303(d) List. TMDLs should have a quantifiable endpoint to measure whether or not the applicable WQS are attained and the associated use(s) protected. 40 CFR 130.7(c)(1) ("TMDLs shall be established at levels necessary to attain and maintain" WQS). If the endpoint is not based on an ambient numeric criterion, then it can be developed from narrative criteria. See, e.g., 40 CFR 122.44(d)(1)(vi).

Comment: There is no scientific evidence that ties TSS, TN or TP to any impairment. These surrogates are not in Missouri WQS and therefore, the TMDL should not be written based upon these surrogates.

Response: The TMDL targets impairment of the General Narrative Criteria by nutrient enrichment and sedimentation. The Missouri WQS that applies is 10 CSR 20 7.031(3). A reduction in TSS, TN and TP are required as these pollutants are impairing the General Narrative Criteria pertaining to the protection of aquatic life. The two supporting references are cited in the draft TMDL's reference section, but are repeated here for your assistance:

- *Ambient Water Quality Criteria Recommendations. Information Supporting the Development of State and Tribal Nutrient Criteria. Rivers and Streams in Nutrient Ecoregion IX. EPA 822-B-00-019. December 2000.*
- *Framework for Developing Suspended and Bedded Sediments (SABS) Water Quality Criteria. EPA-822-R-06-001, May 2006.*

A TMDL is being developed for this water under the requirements found at 40 CFR 130.7 (and specifically 40 CFR 130.7(c)(1)) requiring states to establish TMDLs for waters still requiring TMDLs and in accordance with priority ranking. EPA's regulations state that TMDLs can be expressed in several ways, including in terms of toxicity, which is a characteristic of one or more pollutants, or by some "other appropriate measure." 40 CFR § 130.2(i). They also state that TMDLs may be established using a biomonitoring approach as an

alternative to the pollutant-by-pollutant approach. 40 CFR § 130.7(c)(1). See Section 4 of the Draft TMDL for further discussion of state and federal regulations and authorities.

Comment: EPA should collect more flow data before preparing a TMDL.

Response: Flow data has been estimated consistent with the procedures included in Appendices A, B and C of the TMDL. Missouri may submit and EPA may approve a revised or modified TMDL for this water at any time.

Comment: There is no data in the TMDL that substantiates that minimal wastewater from manure application for both confined and unconfined feeding sites are a major potential source of nutrient loading, so shouldn't this statement be stricken from the TMDL?

Response: All pollutants preventing or expected to prevent WQS attainment (and their sources) are listed in the TMDL, per 40 CFR 130.7(c)(1)(ii).

Comment: Shouldn't EPA investigate potential sewage discharges from illicit straight pipe discharges from households in the watershed?

Response: All pollutants preventing or expected to prevent WQS attainment (and their sources) are listed in the TMDL, per 40 CFR 130.7(c)(1)(ii). Illicit straight pipe discharges of household waste are acknowledged in the TMDL as potential point sources of sediment and nutrients. As required by EPA's regulations, per 40 CFR 122.21(a), any person who discharges pollutants must apply for a National Pollutant Discharge Elimination System (NPDES) permit.

Comment: EPA should investigate the number of these systems [on-site wastewater systems] in the watershed before proceeding with the TMDL.

Response: On-site wastewater systems are acknowledged in the TMDL as potential point sources of sediment and nutrients. As required by EPA's regulations, per 40 CFR 122.21(a), any person who discharges pollutants must apply for an NPDES permit.

Comment: What is the justification for choosing Level III of Ecoregion 40 as the reference condition for TN and TP concentrations?

Response: In the absence of Missouri numeric standards for nutrients in freshwater streams, ambient water quality criteria recommendations provided by the EPA are used to quantify TN and TP loading capacities in Ecoregion 40 and West Fork Locust Creek. Level III Ecoregion 40 targets were used in lieu of national and state-wide targets to ensure either pristine or minimally impacted stream systems. Targets are based on the 25th percentile of all TN and TP data gathered from subecoregion 40 of Aggregate Nutrient Ecoregion IX. Please refer to the TMDL's Appendix C and section 4.2 for a more detailed explanation.

Comment: Why is a TSS concentration selected to represent the TMDL target and how does it pertain to attaining beneficial uses?

Response: There are many quantitative indicators of sediment, such as TSS, turbidity and bedload sediment, which are appropriate to describe sediment in rivers and streams, per *Framework for Developing Suspended and Bedded Sediments (SABS) Water Quality Criteria*. EPA-822-R-06-001, May 2006. A concentration of TSS was selected to

represent the numeric target for this TMDL because it enables the use of the highest quality available data and is included in monitoring data.

LIST OF COMMENTORS

1. Mike McKee, Missouri Department of Conservation, Columbia, Missouri
2. Charles M. Scott, United States Fish and Wildlife, Columbia, Missouri
3. Robert Brundage, Missouri Agribusiness Associates, Jefferson City, Missouri

END SUMMARY OF COMMENT AND RESPONSES