

9-6-2018

Director Keogh, Sarah Clem, Caleb Osborne, et al,

40 CFR 130.7 (b)(1), which provides statutory authority for the 303d List, provides that segments are not required to be listed on the 303(d) list if “other pollution control requirements (e.g. best management practices) *required* by local, State, or Federal authority” are stringent enough to implement applicable water quality standards within a reasonable period of time. **There are no required best management practices in the Buffalo River Watershed Management Plan by any local, State or Federal authority** within the meaning of that regulation, nor are the provisions of the management plan stringent enough to implement the necessary water quality standards within a reasonable period of time.

Without more proactive, stringent and enforceable measures such as those that Category 5 requires, the water quality of Big Creek and the Buffalo River will continue to deteriorate, making remediation more difficult and prolonged. When the long-term effects of phosphorus are taken into account as legacy phosphorus that attaches to sediments and accumulates in soil over time, “a reasonable period of time” becomes a substantial issue. This also becomes an issue for the antidegradation policy that Arkansas must have in place to protect the Buffalo National River’s water quality. It is time for the ADEQ to design its antidegradation policy as just this single issue demonstrates.

Dr. Andrew Sharpley, the author of the Arkansas Phosphorus Index (API), a tool used in both Best Management Practices (BMPs) and Nutrient Management Plans (NMPs), was hired by our state government to lead the Big Creek Research and Extension Team, BCRET, tasked to monitor the water quality of Big Creek.

Professor Sharpley had this to say in an article in the *Journal of Environmental Quality* about the unintended consequences of legacy phosphorus (one of the key components of hog waste): “The water quality response to implementation of conservation measures across watersheds has been slower and smaller than expected. This has led many to question the efficacy of these measures and to call for stricter land and nutrient management strategies.... By concentrating Phosphorus* storage at specific locations in the landscape, however, these practices can create longer term and continuing sources of legacy Phosphorus to receiving waters. **Best management practices can become inadvertent causes of legacy Phosphorus transfers within watersheds.**

<https://bigcreekresearch.org/docs/Legacy P across the watershed continuum.pdf>

The same article “*Phosphorus Legacy: Overcoming the Effects of Past Management Practices to Mitigate Future Water Quality Impairment*” continues the discussion of the problem:

“During the last decade, it has become apparent that many watershed-based conservation programs have failed to deliver improvements in water quality *within timescales predicted* ... where conservation practices to decrease nutrient losses (particularly

phosphorus) from agriculture were put in place 20 to 30 years ago to minimize water quality degradation due to eutrophication. In trying to understand the apparent lack of water quality response, questions have been asked about the effectiveness of the conservation measures introduced and whether they are being correctly located or implemented at a sufficient scale and intensity across watersheds Accumulated Phosphorus can be remobilized or recycled, acting as a continuing source to downstream water *bodies for years, decades, or even centuries* Legacy Phosphorus is particularly problematic because it is characterized by intermediate storage and remobilization along slow or tortuous flow paths between the original source (agricultural fields or point-source discharges) and the watershed outlet.” (*Note: For ease of understanding I have written out Phosphorus when it has been substituted with the letter P.)

As stated, the problem of legacy phosphorus cannot be accurately addressed by voluntary plans in a reasonable amount of time, nor can such practices remedy a pollution problem that continues to be applied in large amounts on a continuing basis in a karst terrain, both from permitted and non-point sources. Only by addressing the impairment of the Buffalo River and its Big Creek tributary head on, by listing them in Category 5, so that available resources of the ADEQ can start to stymie the fouling of the waters, will the beautiful Buffalo River run clear and free from its current troubles for years to come. Any additional measures that the alternative 4b watershed management plan might offer can be voluntarily implemented as well. Category 5 does not negate adding other measures. It is common sense to use all practices, required and voluntary, that are available to remedy the impairment of this national treasure. The EPA explains to states in its 2006 IRG that even in a 4b category there are requirements that cannot be met by voluntary means:

- Element 2. Description of pollution controls and how they will achieve water quality standards;
- 3. An estimate or projection of the time when WQS will be met;
- 4. Schedule for implementing pollution controls;
- 5. Monitoring plan to track effectiveness of pollution controls; and
- 6. Commitment to revise pollution controls, as necessary....

Also, **for evaluating point and nonpoint source loadings that when implemented will achieve WQS, the attachment clarifies EPA’s expectation that a linkage analysis (i.e., cause-and-effect relationship between a water quality target and sources) be included in the Category 4b demonstration element and that a loading capacity may not always be needed.**

EPA’s Office of Water has increasingly supported the application of a watershed approach as an effective tool for environmental management. **The Agency defines the watershed approach as a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems within hydrologically defined geographic areas, taking into consideration both ground and surface water flow.**

Therefore, consistent with current State and federal regulatory requirements and the Integrated Report guidance, Regions should encourage State partners to pursue data collection, data analysis, the identification of impaired waters, and the development of TMDL priorities and schedules that embrace the watershed concept. States should consider all existing and readily available data and information regardless of where in the State the data and information were generated.

(MEMORANDUM SUBJECT: Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions

FROM: Diane Regas, Director /s/ Office of Wetlands, Oceans and Watersheds (pp. 7-9)

https://www.epa.gov/sites/production/files/2015-10/documents/2006_10_27_tmdl_2008_ir_memo.pdf

The ADEQ inappropriately proposes to use category 4b and its Beautiful Buffalo River Watershed Management Plan to cure the impairment of the Buffalo River and Big Creek. In 4b there are no public efforts that are being considered, even with the recently extended public funding for the BCRET research team. There is no plan to monitor “both groundwater and surface water flow” and their inevitable interaction in the karst hydrogeology of the Buffalo National River watershed. BCRET has not, and has no plans to conduct dye trace studies as stated by Andrew Sharpley in a recent deposition, because he claims he relies upon the groundwater flow dye trace study that was conducted by volunteers of the KHBNR team led by Dr. Van Brahana. That study is one of the key sources that the ADEQ used to confirm impairment in Big Creek and the segments identified on the Buffalo. That same study points to the necessity for a state required investigation to fulfill “EPA’s expectation that a linkage analysis (i.e., cause-and-effect relationship between a water quality target and sources)” be undertaken to understand the extent of the impairment and to remedy it. No state or private voluntary efforts to conduct such further investigations and analyses are in the works. ADEQ needs to take responsibility to ensure that a requirement for such investigation be fulfilled by placing the river and Big Creek in impaired category 5. When impairment is most likely to be identified by addressing both point and non-point sources, then measures must be taken to address all possible sources of pollution. A watershed management plan can only address non-point sources, and only by means of voluntary actions. ADEQ must begin to exercise its own capacity and staff to take on this crucial issue affecting the economic and natural well-being of the state of Arkansas. Category 5 gives the state the best means for taking decisive action and the enforcement ability to do so. ADEQ staff answered my inquiries about why they had chosen 4b by stating that the TDML process takes so long to achieve results. That is why I ask that besides starting that process, the agency must also use every available alternative means to remedy the situation. The best management plans can still be implemented and encouraged along with the TDML process. The impairment of the Buffalo and its tributaries must be of highest priority for Arkansas.

On a personal note, as an owner of a recreation canoe, cabin and campground business directly relying upon the river, this is not just an intellectual exercise for me and my family. Making a living for us depends on the water quality of the Buffalo National River. My family is not alone. There are around a thousand people who work in small businesses that visitors enjoy in our watershed. When 70 miles of the river are clogged with algal cover, and there is risk of becoming ill from primary contact, our local livelihoods are threatened. Without visitors whose destination is the heart of the Ozarks, our families will suffer. This issue is not just relevant to farmers. We small business owners and employees rely on the weather and the water just as farmers do for our livelihoods, but there are no government loans or corporate aid for small enterprises like ours when times are tough. If the pollution of the river is not addressed soon, what kinds of jobs will there be for our children in rural Newton County?

Sincerely,

Marti Olesen
PO Box 104
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