



WEST VIRGINIA RIVERS

John Wirts
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Environmental Protection
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Via email to:
John.c.wirts@wv.gov

RE: Comments on Proposed Procedural Rule: Assessment Methodology for the Biological Component of the Narrative Criteria in Wadable Streams

Dear Mr. Wirts,

Please accept these comments on behalf of the undersigned environmental groups. We are concerned about the recent proposal of the new procedural rule: Assessment Methodology for the Biological Component of the Narrative Criteria in Wadable Streams (“Proposed Assessment Methodology” or “proposed rule”). The proposed rule is illegal and statistically unsupportable. Moreover, it is based on an outdated assessment method that is known to underrepresent the extent and severity of stream impairment in West Virginia. It is nothing less than a deliberate attempt by the West Virginia Department of Environmental Protection (“WVDEP”) to avoid its duties under the Clean Water Act. It is a benefit to polluters at the expense of the health of West Virginia’s streams and a sacrifice of the scientific integrity of the agency.

1. The proposed WVSCI impairment thresholds are statistically and scientifically unsupportable

The proposed rule separates thresholds for attainment and impairment of biological integrity. The attainment threshold is proposed to be a West Virginia Stream Condition Index (“WVSCI”) score of 72 (the same threshold used for both attainment and impairment in the 2014 303(d) list). This threshold was appropriately established using the 5th percentile of reference samples. The impairment threshold, however, was arbitrarily designated as 61. Scores between 61 and 72 are therefore indeterminate and considered neither to be in attainment or impaired.

This indeterminate zone, or “zone of uncertainty” parallels the prior use of a “gray zone” in the WVSCI that was previously used by the WVDEP and rejected by the U.S. EPA. (At that time there were fewer reference samples in the dataset and the 5th percentile of reference streams achieved a WVSCI score of 68. The gray zone at that time was a WVSCI score between 60.6 and 68 and streams in that zone were considered neither impaired nor in attainment.) The U.S. EPA repeatedly warned the WVDEP that the use of such a “gray zone” is statistically unsupportable. This was explained extensively in EPA’s correspondence that partially disapproved WVDEP’s submission of a 2012 303(d) List. In promulgating its own list of streams, *without the use of a gray zone*, the EPA explained:

Any percentile estimated from a raw distribution of single reference site values will include the effects of sampling variability and measurement error and further adjustment for sampling variability would account for sampling variability twice in the threshold determined (i.e. sampling variability would be double counted).

Garvin Letter, March 35, 2013, Enclosure 2 at 4. This problem is exacerbated by the fact the West Virginia uses a low percentile of reference stream samples (5th percentile) to set the attainment threshold. Using the 5th percentile allows for very few false positives, i.e. healthy streams that are rated as impaired. *Id.* at 4, n. 2.

The new “zone of uncertainty” suffers from the same statistical deficiency as the previous “gray zone.” In establishing an attainment threshold of 72, based on the 5th percentile of reference samples, variability is already taken into account. Again, the use of a 5th percentile threshold allows for very few cases in which a healthy stream will be rated in the nonattainment category. Moreover, the lowest reference site score in the WVSCI dataset used for recalibration is 64.74. The designated impairment threshold of 61 is entirely outside of the reference dataset and cannot be justified by *any* statistical methodology appropriate for use in developing a biological assessment methodology.

In response to a FOIA request for data, analysis, and rationale, used to develop the proposed rule the DEP confirmed that, “The zone of uncertainty (61-72) is an arbitrary threshold to allow the agency flexibility in the determination of impairment for scores that approach the attainment threshold.” FOIA Response (April 11, 2019). In other words, the agency does not even purport that there is a scientific or statistical justification for use of the zone of uncertainty.

The statistical problems described above are made even worse by mandating that a single score below 50 or an average score (of two scores taken within the last five

years) between 50 and 60 is needed to classify a stream as impaired. Even if an impairment threshold of 61 could somehow be justified based on the reference dataset (it cannot) the requirement of an average of two scores is statistically dubious. WVSCI thresholds (when established appropriately) have always been set based upon a raw distribution of reference scores. Requiring average scores for assessed reaches results in the comparison of two different types of data (“corrected’ data with raw data.). Finally, the score of 50 required for categorization of a stream as impaired based on a single sample is more than 14 points below the score of any reference stream in the WVSCI dataset, cannot be supported statistically or scientifically or by any other rational explanation.

2. The WVDEP has not articulated any reasonable basis for failing to replace WVSCI with the Genus Level Assessment of Most Probable Stream Status

For nearly decade, West Virginia has been repeatedly directed to replace WVSCI with the more accurate and rigorous Genus Level Assessment of Most Probable Stream Status (“GLIMPSS”). In its approval of the 2010 303(d) List, EPA instructed WVDEP to move “to a genus-level analysis for its 2012 section 303(d) List.” Letter from John Capacasa to Scott Mandirola (Feb. 8, 2011). The approval letter explained that WVDEP’s assessment tool (WVSCI) was outdated and that EPA expected West Virginia to adopt an available and approved genus-level assessment protocol (GLIMPSS). *Id.* The letter further explained that genus-level assessment’s, like GLIMPSS, were being used by EPA, and states surrounding West Virginia (including Kentucky, Pennsylvania, Maryland, and Ohio). *Id.*

When WVDEP promulgated the 2012 303(d) List it ignored EPA’s instruction and again relied on WVSCI to assess narrative criteria impairments. EPA initially questioned WVDEP’s refusal to adopt GLIMPSS stating in its review of that draft: “It is not clear to EPA why DEP has declined to use GLIMPSS for its 2012 Section 303(d) list or how the draft 2012 Section 303(d) list addresses the concerns raised by EPA.” EPA Comments on West Virginia’s 2012 Draft Section 303(d) List (June 6, 2012)). EPA noted that GLIMPSS had been subject to peer review during 2012. *Id.* In the end, EPA relented and approved the 2012 List, despite WVDEP’s continued reliance on WVSCI. EPA warned, however, that it was still recommending the use of GLIMPSS for future assessments. It cautioned that EPA’s allowance of WVSCI for the 2012 list would not be an indication that the same methodology could be used in 2014. Letter from Shawn Garvin, EPA, to Randy Huffman, WVDEP, Encl. 2 (September 30, 2013) (“If a new methodology is not in place for the 2014 Section 303(d) list, EPA will reconsider the range of existing and readily available information, including available assessment methodologies at that time.”).

In its 2014 draft 303(d) List WVDEP continued to rely on WVSCI rather than GLIMPSS. EPA noted that WVDEP had the capacity to use genus level data in its assessment and directed the agency to “update biological assessment results using GLIMPSS for the final [303(d) List] submission to EPA.” EPA’s Comments on West Virginia’s Draft 2014 Section 303(d) List (July 11, 2014).

WVDEP issued its final 2014 303(d) List without regard to EPA’s comments on its draft. On May 11, 2016, EPA sent a letter to WVDEP informing the state agency that EPA was partially disapproving the submission of the 2014 303(d) List based on the WVDEP’s failure to use GLIMPSS. Letter from Shawn Garvin to Randy Huffman (May 11, 2016). EPA noted that the science around biological monitoring had “progressed significantly” since the development of WVSCI in 2000. *Id.* Encl. 2 at 11. EPA further explained:

By not evaluating genus-level data, important information may be missed. For example, in a recent study, sample identification at the genus level taxonomy demonstrated loss of entire functional feeding groups (Pond, et al 2014). Evaluation of genus-level data allows for evaluation of information on the scraper and shredder guilds. Loss of an entire functional feeding group (at the genus level) indicates ecosystem imbalance and the potential to undermine support of fish communities in the assessed and downstream reaches.

Id. Again, EPA informed the WVDEP that it was not singling out West Virginia, explaining that Ohio, Kentucky, Pennsylvania, and Maryland all use a genus-level method. *Id.* EPA concluded that WVDEP has “existing and readily available data” and that the data “should have been evaluated using appropriate and scientifically sound methodologies.” *Id.* The federal agency noted that, there exists a peer-reviewed and approved methodology for evaluating these data. *Id. citing* (Pond, 2012).

Despite the repeated direction from EPA to adopt GLIMPSS, the WVDEP again used the outdated WVSCI method to evaluate streams for the 2016 303(d) list. In response to a request for a technical justification for rejection of GLIMPSS, WVDEP explained

WVDEP is not using the genus level macroinvertebrate dataset for 303(d) listing purposes currently due to concerns with the robustness of the genus level reference dataset in several season / ecoregion specific IBIs. The Summer Plateau, Summer Mountain > 60 mi², and Spring Plateau IBI's currently have less than 10% of the number of reference samples that were used in the recent update of the statewide WVSCI impairment threshold, with the Summer Plateau having just 6.4% of the number of reference samples used for the WVSCI update. WVDEP has determined that these numbers are too low to provide confidence in use of these IBIs.

2016 303(d) Report. Although the EPA accepted this rationale, and approved the 2016 303(d) list, it does not stand up to scrutiny.

Overall, there are at least as many reference samples available for GLIMPSS (729) as were used to recalibrate WVSCI (641).¹ The lower number of samples available for some seasons and eco-regions in the GLIMPSS dataset comes from the fact that it is split into seven different categories while WVSCI is not divided into any separate categories for different eco-regions or seasons. If the number of sample sites in each eco-region/season is problematic, GLIMPSS region and or seasons should be averaged to come up with the requisite number of reference samples or sampling should be limited to seasons in which a sufficient number of samples is available. The WVDEP should not use its own decision to subdivide GLIMPSS into numerous categories as rationale for not implementing the methodology. Particularly because the published development document for GLIMPSS used only four sub-categories. *See Pond et al. 2013.* Although WVDEP should continue to expand benthic macroinvertebrate datasets, the number of reference sites in the WVSCI database will always be a moving target, and the subcategories of GLIMPSS will always have a fraction of the number of reference streams as the result of the subdivision of that index. The proposed rule continues to use WVSCI rather than GLIMPSS without any reasonable justification for doing so.

3. The proposed assessment methodology will result in violations of the DEP's duties under the Clean Water Act

Under the West Virginia Administrative Procedures Act, an agency decision should be set aside if it is either “[c]learly wrong in view of the reliable, probative and substantial evidence on the whole record; or “[a]rbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion.” *Tennant v. Callaghan*, 490 S.E.2d 845, 849-50 (W.Va. 1997) (quoting W.Va. Code § 29A-5-4(g)). As discussed above, the proposed rule, is unsupportable by any reasonable scientific or statistical method. Moreover, a major portion has been described by the agency as “arbitrary.” A decision to nonetheless adopt the proposed rule would be contrary to the state Administrative Procedures Act.

The proposed rule would also result in direct violations of the agency responsibilities under the Clean Water Act. Pursuant to section 303(d) of the Act, 33 U.S.C. § 1313(d), each state must identify waters within its boundaries where existing effluent limits are insufficient to achieve applicable water quality standards. In the process of identifying such waters, the state must “assemble and evaluate all existing and readily available information.” 40 C.F.R. §

¹ These numbers are from the comparison of the WVSCI recalibration dataset with the recalibration of GLIMPSS dataset provided by the WVDEP in response to an April 2, 2019 FOIA request.

130.7(b)(5). West Virginia's water quality standards include narrative criteria established to protect aquatic life. W.Va. C.S.R. §§ 47-2-3.2.e and -3.2.i. The proposed rule has been established as the methodology to determine whether these narrative criteria are satisfied in any given stream. Proposed Rule at 1. Because the proposed rule allows the DEP to ignore information about streams in the zone of uncertainty, and streams with a single sample WVSCI score between 50 and 72, it will result in the agency ignoring information relevant to the identification of waters where water quality standards are not being achieved. It will thus result in a failure of the state to list waters where existing effluent limitations are insufficient to achieve applicable water quality standards. In other words, the proposed rule, if implemented results in a violation of the state's responsibilities under the Clean Water Act.

In addition to its § 303 related duties, the proposed rule will make it impossible for the agency to comply with its duties in issues West Virginia/National Pollutant Discharge Elimination System ("WV/NPDES") Permits. Federal regulations require states to issue permits that will result in compliance with "State narrative criteria for water quality." 122.44(d)(1); 123.25(a)(15) (making requirement directly applicable to the states). By proposing a rule that will result in the failure to identify all streams that do not meet West Virginia's narrative, it will be impossible for DEP permit writers to appropriately write permits to protect those standards.

Signed,

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