

Pat Fitts  
Director

Chris Colclasure  
Deputy Director



Chris Racey  
Deputy Director

Roger Mangham  
Deputy Director

## Arkansas Game and Fish Commission

September 3, 2020

Becky W. Keogh, Secretary  
Arkansas Department of Energy and Environment  
5301 Northshore Drive, North Little Rock, AR 72118

&

Jacob Harper  
Arkansas Department of Energy and Environment  
5301 Northshore Drive, North Little Rock, AR 72118

### NOTICE OF RULE 2 CHANGE - Request for Public Comment APC&E Docket # 20-004-R

Secretary Keogh and Mr. Harper,

Biologists with the Arkansas Game and Fish Commission (AGFC) have reviewed the subject referenced notice and have participated in stakeholder discussions in early 2019 on these proposed changes to Arkansas water policy. We appreciate the opportunity to engage in this review process. In addition to comments and questions raised by our agency during the stakeholder engagement process, we also offer the following comments, questions, and suggestions.

#### -2.509 Nutrients

For more than two decades the US EPA has been providing guidance on how to properly develop scientifically defensible numeric nutrient criteria for the protection of the most sensitive beneficial uses (EPA 2000, EPA 2020). The AGFC recognizes DEQ's ecoregion approach and data collection efforts reported in Part III, Chapter Five of the 2018 Integrated Water Quality Monitoring Report. The DEQ reports data collected from Extraordinary Resource Waters (ERWs) were comparable to EPA Level III Aggregated Ecoregion values. Until such time that the DEQ has completed thorough analysis and vetting of its completed stressor-response studies for all ecoregions, the AGFC encourages use of the 2002 EPA Level III Aggregated Ecoregion values for rivers and streams. Similarly, the EPA recently released updated values for lakes and reservoirs (EPA 2020). As the AGFC owns nearly 20,000 acres and manages fisheries for all the nearly 300,000 acres of significant publically owned waters in the state, we strongly support the DEQ promulgating US EPA recommended values until such a time that the DEQ can present site- specific or regional numeric nutrient criteria for the protection of reservoir beneficial uses.

## -2.511 Minerals

The AGFC has concerns for protection of aquatic life designated uses and protection of Outstanding Resource Waterbodies designated uses for waterbodies not designated in Rule 2.511(A). Table-3 of the 2020 Assessment Methodology for the Preparation of the 2020 Integrated Water Quality Monitoring and Assessment Report indicates that Rule 2.511(A) and (C) are intended to be protective of both Outstanding Resource Waterbodies (Rule 2.302 (A-C) and Aquatic Life (Rule 2.302(F)). However, approximately half of Extraordinary Resource Waters (ERWs) are excluded from Rule 2.511(A) and more than half of the Ecologically Sensitive Waterbodies (ESWs) are excluded as well. While the focus of these comments are on proposed actions on Rule 2, the Assessment Methodology and revisions to Rule 2 are inevitably commingled. The AGFC proposes that DEQ, whilst developing appropriate criteria for all waters or, more appropriately applying Ecoregion Values (Rule 2.511(B)) to all other waters as denoted by EPA's 2007 Record of Decision, should consider promulgating site-specific criteria for all remaining ERWs and ESWs. However, if DEQ opts for not developing new site-specific criteria, additional revisions to the assessment methodology should be considered to provide ample protection of these designated uses

To further expand upon utilizing Rule 2.511(B) Ecoregion Values for the protection of aquatic life in ERWs, ESWs, and all other waterbodies deemed to be high quality, the AGFC agrees with the US EPA 2007 Record of Decision (ROD) and 2016 ROD on DEQ's 2013 Triennial Review that Arkansas has naturally low ionic and mineral concentrations (Griffith 2014). Endemic, rare, threatened, and endangered species that inhabit these waterbodies have adapted to low ionic concentrations. Recent literature supports that increased ionic stress can greatly reduce biological diversity (Cormier et al. 2013, Cormier and Zheng 2018). The DEQ's long-term plan includes development of tiered aquatic life designated uses (ADEQ 2018), which the AGFC is supportive of. However, the timeline provided to stakeholders at the onset of the 2018 Triennial Review process extends criteria development to nearly 2030. This would ultimately allow another decade or more before protective mineral criteria are established for all other waters. Therefore, the AGFC supports addition of protective criteria to 2.511(A) for protection of ERWs, ESWs, as well as the adoption of 2.511(B) as criteria for the protection of aquatic life designated uses until such time that other reasonable criteria are established.

## -Hydrologic Alteration

The AGFC supports the resolution that the Southern Division of the American Fisheries Society adopted in 2019, which calls for the inclusion of hydrologic alteration as a source of impairment for state water quality standards. Flow alteration can be a primary contributor to the impairment of water bodies that are designated to support aquatic life. A USGS study (Carlisle et al. 2011) found that anthropogenic hydrologic alteration is extensive in the US and may be a primary cause of ecological impairment in river and stream ecosystems. We recommend that DEQ follow the guidance provided by the EPA (Best-Wong 2015) to incorporate either numeric or narrative flow criteria into the state water quality standards as soon as possible.

## -Sedimentation and Embeddedness:

Rule 2 does not address sedimentation and embeddedness. AGFC recommends the use of language similar to the State of Oklahoma's to include sedimentation and embeddedness in Rule 2 and encourages the immediate implementation of sedimentation and embeddedness standards in the ecoregions bordering Oklahoma; Ozark

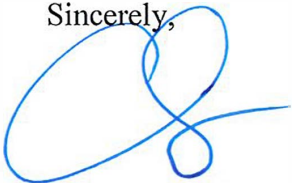
Mountains, Arkansas River Valley and Ouachita Mountains. ADEQ report WQ99-07-1 contains data collected for reference streams in the aforementioned ecoregions that could be used to determine impairment.

-Ecologically Sensitive Waterbodies

Some waterbodies have known occurrences of threatened and endangered species, but are not currently recognized by Rule 2 Appendix A as Ecologically Sensitive Waterbodies (ESWs). The AGFC encourages DEQ to solicit information from state and federal partners pursuant to 40 CFR § 131.20 to expand designations of ESWs based upon new and updated species distribution and collection records. Arkansas is required during the review and revision of water quality standards, to “hold public hearings for the purpose of reviewing applicable water quality standards adopted pursuant to 131.10 through 131.15 and federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly.” DEQ has routinely excluded the addition of new waterbodies with known distributions of threatened and endangered species to Rule 2, Appendix A. The AGFC works with state, federal, non-governmental organizations, and private landowners to protect, enhance, and maintain habitat for aquatic threatened and endangered species and Species of Greatest Conservation Need.. The expert staff at AGFC would be available to assist DEQ in this endeavor of updating the list of ESW designations based on updated occurrence records.

The Arkansas Game and Fish Commission appreciates the opportunity to comment on the updates to Rule 2 during this triennial review cycle. We also appreciate the opportunity to participate in the stakeholder engagement process in 2019. We look forward to working with the DEQ to conserve the aquatic resources of the state.

Sincerely,



Chris Racey - Deputy Director



## References

Arkansas Department of Environmental Quality. 2018. Arkansas's 2018 List of Impaired Waterbodies Executive Summary. Accessed from <https://www.adeq.state.ar.us/water/planning/integrated/303d/pdfs/2018/executive-summary.pdf> Accessed on: August 21, 2020.

Best-Wong, B. 2015. Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. Memorandum to Water Division Directors, Regions 1-10. United States Environmental Protection Agency, Washington D. C. Available at [https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-covermemo-8\\_13\\_2015.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-covermemo-8_13_2015.pdf)

Carlisle, D.M., D.M. Wolock, and M.R. Meador. 2011. Alteration of streamflow magnitudes and potential ecological consequences—A multiregional assessment: The Ecological Society of America, *Frontiers in Ecology and the Environment*, v. 9, no. 5, p. 264–270. <http://dx.doi.org/10.1890/100053>

Cormier, S.M., G.W. Suter II, L. Zheng. 2013. Derivation of Benchmark for Freshwater Ionic Strength. *Environmental Toxicology and Chemistry*, 32(2), 263-271.

Cormier, S.M and L. Zheng. 2018. A field-based characterization of conductivity in areas of minimal alteration: A case example in the Cascades of northwestern United States. *Science of the Total Environment*. DOI: 10.1016/j.scitotenv.2018.02.018

Environmental Protection Agency, US, 2000. Nutrient Criteria Technical Guidance Manual: Rivers and Streams: EPA 822-B-00-002. 253pp.

Environmental Protection Agency, US. 2008. Arkansas Triennial ("Phase II") Revisions to Regulation No. 2. Accessed from <https://www.adeq.state.ar.us/water/planning/reg2/pdfs/record-of-decision/2007-epa-action-ltr-rod-ar-tr-phase-2.pdf> Accessed on August 21, 2020

Environmental Protection Agency, US. 2020. Draft Ambient Water Quality Criteria Recommendations for Lakes and Reservoirs of the Conterminous United States: Information Supporting the Development of Numeric Nutrient Criteria. 820P20001. 123 pp.

Environmental Protection Agency, US. 2016. Arkansas 2013 Triennial Revisions to Regulation No.2. Accessed from <https://www.adeg.state.ar.us/water/planning/reg2/pdfs/record-of-decision/20161028-final-ar-tsd.pdf> Accessed on: August 21, 2020.

Griffith, M.B. 2014. Natural Variation and Current Reference for Specific Conductivity and Major Ions in Wadeable Streams of the Conterminous USA. *Freshwater Science* 33 (1), 1-17. <https://doi.org/10.1086/674704>