



Industries for the Environment

Union Station –Suite 302—1400 West Markham

Little Rock, AR 72201

Phone: 501-374-0263 Fax: 501-374-8752

www.environmentark.org

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Jim Wise
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Re: 303 d List Assessment Methodology

The following comments are submitted on behalf of the Arkansas Environmental Federation (AEF), a non-profit association with more than 200 company members based in Little Rock, Arkansas. Our organization provides training for environmental professionals and advocates for Arkansas industry regarding environmental policy.

Comment 1.

The 2016 303d list review protocols use the EPA's Secondary Drinking Water Criteria of 250 mg/L for chloride and sulfate and 500 mg/L for TDS to assess impairment of Agricultural and Industrial Water Supply uses. This is the same criteria used to assess impairment of Domestic Water Supply uses.

In many cases, it is not technically appropriate to use Secondary Drinking Water Criteria to assess water quality for Agricultural and Industrial uses. The quality of water needed to support those uses is very specific to a particular agriculture practice or industrial use. We strongly recommend that the ADEQ determine appropriate assessment criteria for those uses in the development of the 2018 303d list. This is needed to minimize the possibility of erroneous Category 5 listings due to using criteria unrelated to the Agricultural and Industrial uses.

Comment 2.

To make fisheries use attainment decisions using macroinvertebrates, the ADEQ is following a multi-metric analysis that includes six metrics. Each metric is scored with a 0, 2, 4, or 6 following comparison with a reference site. This ADEQ analysis is modified from the procedures for Rapid Bioassessment of the EPA.

The EPA Rapid Bioassessment Biological Condition Scoring Criteria from which the ADEQ scoring criteria are based appear to result in considerably different endpoints with respect to the Biological Condition Category. The EPA uses different narrative titles for the Biological Condition Categories (i.e., Nonimpaired, Slightly Impaired, Moderately Impaired, and Severely Impaired) compared to the scoring criteria used in Arkansas. The following table presents the EPA categories from its publication entitled *Rapid Bioassessment Protocols for Use in Streams and Rivers (EPA/440/4/89/001)*.

BIOASSESSMENT		
<u>% Comp. to Ref. Score^(a)</u>	<u>Biological Condition Category</u>	<u>Attributes</u>
>83%	Nonimpaired	Comparable to the best situation to be expected within an ecoregion. Balanced trophic structure. Optimum community structure (composition and dominance) for stream size and habitat quality.
54-79%	Slightly impaired	Community structure less than expected. Composition (species richness) lower than expected due to loss of some intolerant forms. Percent contribution of tolerant forms increases.
21-50%	Moderately impaired	Fewer species due to loss of most intolerant forms. Reduction in EPT index.
<17%	Severely impaired.	Few species present. If high densities of organisms, then dominated by one or two taxa.

(a) Percentage values obtained that are intermediate to the above ranges will require subjective judgement as to the correct placement. Use of the habitat assessment and physiochemical data may be necessary to aid in the decision process.

Our understanding of the historical use of the EPA scoring system was that the categories of Slightly Impaired and Nonimpaired translate to fully supporting of the aquatic life (fisheries) use. If a test site and a reference site were 54% similar (or greater) in score then the test site was determined to be Slightly Impaired and Fully Supporting.

The Arkansas assessment method for macroinvertebrates (below) contains attainment status categories based on percent similarity to determine community structure. There are four types of Attainment Status; Comparable to Reference, Supporting, Partially Supporting, and Non-Supporting.

Attainment Status	% Comparable Estimate	Attribute
Comparable to reference	≥90%	Expected to support the community structure present at the reference site
Supporting	75-88%	Should support a diverse community similar to the reference site
Partially Supporting	60-73%	Difference in the biological community may be due to the poor habitat. Comparisons may be difficult
Non-supporting	<58%	Should not be expected to support the community present at the reference site

However, the difference appears that in order to be considered supporting, the percent similarity between the test site and the reference site has to be a minimum of 75%. Another important difference is that the ADEQ process shows that <58% similar is Non-Supporting whereas EPA would find a similarity score of 57% as only slightly impaired and therefore supporting.

We request that ADEQ provide the background and the technical documentation utilized in the development of this benthic scoring system. We also request a response as to why Arkansas elected to be more restrictive in their benthic analysis than EPA.

The AEF sincerely appreciates the Department's thoughtful consideration of the above comments and suggestions.

Respectfully Submitted,

Charles M Miller

Charles M. Miller
Executive Director