



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10

1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

OFFICE OF  
WATER AND WATERSHEDS

Ms. Susan Braley  
Watershed Management Program Section  
Washington State Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504-7600

APR 06 2018

RE: EPA Comments on Draft Revisions to Water Quality Assessment Policy 1-11

Dear Ms. Braley,

Thank you for providing the EPA with the opportunity to review Ecology's draft revisions to Policy 1-11. We appreciate the extensive public process Ecology has undertaken to improve transparency, as well as to document the decision making process which guides assessment determinations. The EPA would like to offer a few comments which may help further clarify a few points in the final policy.

**2B. Bioassessment**

Assessment Information and Data Requirements: The EPA agrees that biological assessment information derived from macroinvertebrate and periphyton community metrics should be considered credible data to be used where defensible to assess waters for aquatic life attainment. We would like to reiterate that as Ecology has indicated, the EPA national guidance directs States to place waters in Category 5 if water quality standards are not being attained, even if the specific pollutant causing the impairment has not yet been identified.

Evaluating Bioassessment Data based on B-IBI: The EPA is pleased that Ecology has developed a biological assessment program capable of reliably evaluating benthic community data throughout the entire state. We also appreciate Ecology's consideration of our earlier comments regarding the scoring scale and the adjustment of the scale to a range of 0-100, as well as Ecology's decision to raise the B-IBI percentile value to the 10<sup>th</sup> percentile for impairment determinations.

The EPA feels Ecology could provide more background documentation regarding the statistical and ecologic analyses that supports certain B-IBI listing details including:

- 1.) Selection of the 10<sup>th</sup> percentile of reference conditions as the threshold for aquatic life impairment. More specifically, what level of ecological structure, function, and diversity is associated with the 10<sup>th</sup> percentile and how does that level compare to the biologic integrity goal of the Clean Water Act?
- 2.) Selection of a two-year data window and how that may adequately represent a site influenced by serial correlation, environmental cycles, or long-term trends.
- 3.) Comparison of multiple samples to a lower percentile of the reference stream statistical population rather than the central tendency.
- 4.) Description of pollutant-related metrics and how they will be used to determine if a site is outside of defined tolerance levels. With the goal of increased transparency, the EPA suggests that a flowchart depicting decision nodes would be helpful in understanding how pollutant-

related metrics will be used to assess and categorize waters. With this comment the EPA: (a) emphasizes our national policy that waters should be placed in Category 5 even if the specific cause of the impairment has not been identified and, therefore, (b) recommends that B-IBI scores below the 10<sup>th</sup> percentile are acceptable basis for placement in Category 5.

## **2C, D, F. Dissolved Oxygen, pH and Water Temperature**

The EPA appreciates the detail that Ecology has provided with respect to implementing the hypergeometric test. In support of transparency goals, EPA offers these sections may benefit from more discussion of Type 1 and Type 2 errors and error rate objectives associated with: (1) application of the hypothesis tests and (2) evidentiary requirements such as (but not limited to) requiring multiple years of data for discrete data as compared to one year of continuous timeseries data.

The EPA is interested in learning more about Ecology's rationale for requiring a hypothesis test to place waters into Category 5 but not to delist. In addition, how does such an approach align with Type 1 and Type 2 error objectives?

## **2J. Turbidity**

We understand that Ecology is not proposing any changes to turbidity methods. However, the EPA is interested in learning more about the population of background turbidity levels measured at reference or sentinel sites used by Ecology to implement the applicable criterion.

## **2H. Toxics-Aquatic Life Criteria**

The EPA agrees with Ecology that individual daily values should be compared to the 4-day chronic criteria for situations where multiple daily values cannot generate a 4-day average (page 59). With this comment, the EPA notes that language located elsewhere in section 2H may conflict with this approach, such as page 58 under 'Averaging Periods' where Policy 1-11 indicates that composites or multi-point data within a 4-day period may be required to assess waters. With respect to situations where multiple samples are not available within a 4-day period, the EPA notes that two instances of exceeding a criterion with a '1 in 3' allowable exceedance frequency is adequate basis for placing a water into Category 5.

Metals and Ammonia: Although not a revision, the EPA offers that the existing policy regarding the need for 'same event' sampling for pH and hardness likely results in fewer waters being placed in Category 5 (i.e., structural Type 2 error). With this comment, the EPA notes that other states have developed default regional assumptions for implementation of metals and ammonia criteria.

## **2I. Toxics-Human Health Criteria**

The EPA commends and supports Ecology's use of a listing policy based on fish tissue data and would like to acknowledge the state for being a national leader in determining listings using this science-based method. The EPA also recognizes the challenges in developing a listing methodology for appropriately stringent human health criteria supporting reasonable implementation of these criteria. *We feel the methodology could benefit from some additional background information and detail that would increase the transparency and basis of Ecology's listing rationale for human health criteria. These areas include: the comparative protectiveness when considering joint exposure to chemicals in water and tissue versus*

Ecology's use of water or tissue exposure alone; the protectiveness of not including additional non-water/fish tissue exposures when developing evaluation criteria for non-carcinogens; the use of the median rather than the average for compliance determination, in particular discussing how these statistics characterize exposure; and the adequacy of sample size as a function of the size of waterbodies to be evaluated. The EPA intends to work closely with Ecology as implementation of these revised listing procedures are used for human health criteria in future listing cycles and supports refining the process as needed.

Again, the EPA acknowledges the tremendous amount of effort that Ecology has put forth in engaging their stakeholders in developing these revisions. We look forward to the release of the final policy.

Sincerely,



Jill Fullagar  
Impaired Waters Program Coordinator  
EPA, Region 10