

**This question and answer was circulated to the Puget Sound newsletter recipient list  
by Deb Lester, King County in June 2012**

Dear Colleague,

This email responds to questions that were asked during the recent May 8, Benthic Macroinvertebrate Monitoring Grant Advisory Panel meeting. Participants asked about Ecology's policies regarding the use of macroinvertebrate data to evaluate stream sites for impairment under the Clean Water Act (303d listing) (Referred to as the [Water Quality Assessment](#)).

**Q** - Will Ecology pull data from the Puget Sound Stream Benthos Database to make impairment listing determinations?

**A** - No. Jurisdictions must submit their data to Ecology via the Environmental Information Management (EIM) system to be considered in the Water Quality Assessment (WQA) process. Four counties submitted data in 2011 for the most recent call for data. The next call for data will be in 2016. [Note: The Puget Sound Stream Benthos data management system has a download option that outputs the taxonomic data into Ecology's EIM format for easier uploading.]

**Q** - What are the requirements for benthic macroinvertebrate data to be used in the listing process?

**A** - For data to be listed as category 5 (impaired) for Ecology's WQA, benthic macroinvertebrate data collection protocols must meet three criteria related to (1) the area sampled, (2) taxonomic resolution, and (3) sampling frequency. Data that do not meet these requirements can be submitted to EIM for consideration, but will not be listed as category 5 (impaired). Instead, if non-conforming data suggest impairment, they will likely be listed as category 2 indicating more data are required.

- (1) *Area sampled.* Samples must be collected from an area at least 8 ft<sup>2</sup> in size. Samples collected from 9 ft<sup>2</sup> will be accepted as long as data are reported for the entire 9 ft<sup>2</sup> area and not the average of three 3 ft<sup>2</sup> samples. Data from a 3 ft<sup>2</sup> sample area will not be accepted. Data from 8 ft<sup>2</sup> areas can be entered into the Western Washington River Invertebrate Prediction and Classification System (RIVPACS) multivariate model. That model is not calibrated for 3 ft<sup>2</sup> areas.
- (2) *Taxonomic resolution.* Taxonomic identification must be to the "lowest possible level" (LPL) as defined by Ecology's standard operating procedure ([SOP](#)) document. This protocol requires identification of chironomids, oligochaetes, and mites (Acari) to a finer level of taxonomy than is typically done by many jurisdictions. Taxonomic laboratories charge slightly different rates, but based on some quotes to King County, taxonomic resolution to LPL would increase the price from about \$200/sample to about \$250/sample.
- (3) *Sampling frequency.* Before a waterbody can be listed as category 5 (impaired), two out of 5 years of data have to score in the impaired range. This means that streams need to be visited at least every 4 years to ensure there are two visits within a 5 year window.

**Q** - When can benthic data be uploaded to Ecology's EIM system?

**A** - Data can be uploaded at any time – there is no need to wait until an official call for data. In fact, data submittal is encouraged on an ongoing or annual basis.

**Q** - When is Ecology's next call for freshwater data?

**A** - The next freshwater call for data will be in 2016 and will likely extend from January to April or May of 2016; data collected between 2011 and 2015 will be assessed at that time.

**Q** - What are the criteria and thresholds used to determine impairment?

**A** - Ecology's [Water Quality Program Policy 1-11](#) outlines how waterbody segments are assessed for the Clean Water Act. Bioassessment criteria are outlined beginning on page 23. The table below summarizes the different 303(d) category thresholds for RIVPACS and B-IBI scores, but placement in any of the categories requires scores within the designated range in at least two of the last five years for both B-IBI and RIVPACS analysis methods.

303(d) category	303(d) description	RIVPACS Threshold	B-IBI Threshold	B-IBI Category
Category 1	No impairment	> 0.86	≥ 38	"Good" or "Excellent"
Category 2	Waters of Concern	0.73-0.86	28-36	"Fair"
Category 5	Impaired	< 0.73	≤ 27	"Very Poor" or "Poor"

The B-IBI impairment threshold being used for the 2012 call for data is not summarized in Ecology's Policy 1-11 document, but it has been approved and follows the example of the State of Georgia. When the B-IBI scoring is recalibrated to a 0-100 range, this threshold will be revisited.

We will keep you posted on further developments. Good luck with your 2012 sampling!

Sincerely,

The Puget Sound EPA macroinvertebrate grant team:

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