



Ed Chadd and Hannah Merrill, Co-Managers

December 16, 2004

Ken Koch, Water Quality Assessment Coordinator  
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Dear Mr. Koch:

This is a response to a letter sent by Susan Braley of the DOE Water Quality Program, dated December 6, 2004. That letter responded to a letter sent by Thomas Locke and Robert Robertsen of Clallam County on March 15, 2004, detailing objections to the way in which DOE was handling biological-impairment data submitted by Streamkeepers of Clallam County as part of DOE's preliminary Water Quality Assessment report.

Specifically, Streamkeepers had submitted biological-impairment data using the genus-level Benthic Index of Biological Integrity for the Puget Sound Lowlands (B-IBI), a calibrated multimetric index developed at the University of Washington (a list of references to which can be found at <http://www.cbr.washington.edu/salmonweb/bibi/>). DOE's draft list classified all of Streamkeepers biological-impairment data under Category 4c, "Impaired by a Non-Pollutant"—a list that requires no further investigation or cleanup plan. In their March 15 letter, Locke & Robertsen argued that sites found to be biologically impaired should either be listed in Category 5 (i.e., the 303(d) list, requiring further investigation and a cleanup plan) or else in a new Category 4d which would at least require further investigation to determine the source of the impairment.

We are not satisfied with Braley's response, which fails to respond to the specific points made in the Locke/Robertsen letter. We will explain further below, by quoting and responding to excerpts from Braley's letter, identified below by capital letters:

A. Braley begins by quoting from DOE's Water Quality Policy 1-1 1 which lists "non-pollutants that cause impairment and thus cause pollution. That list of "non-pollutants" includes:

- Physical habitat alterations
- Physical barriers to fish migration
- Loss of habitat due to invasive exotic species

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- Flow alterations
- “Impaired biologic communities, when the impairment is not linked or suspected to be linked to a pollutant.

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Braley comments that “Category 4c is more appropriate for habitat-related impairments when the impairment is not linked or suspected to be linked to a pollutant.” We find that reasoning flawed, for two reasons:

1. “Impaired biologic communities,” unlike all of the other examples on DOE’s list, are not “habitat-related impairments.” They may be caused by habitat-related impairments, or by pollutants, but they are not themselves “habitat-related impairments.” Therefore, they should not be treated the same as the other items in DOE’s list. As Locke & Robertsen stated, “the items on that list are supposed to be stressors (factors that cause impairment), whereas impaired biological communities are not stressors. Rather, they are signs of impairment due to the presence of stressors.” Braley’s reasoning simply doesn’t apply to impaired biological communities.
2. Braley quotes the qualification stated in the Water Quality Policy that “Category 4c is more appropriate.,, *when the impairment is not linked or suspected to be linked to a pollutant*” (italics ours). She goes on to say that, “If a pollutant were known or suspected, we would list that segment with the associated pollutant in Category 5.” Our reading of those statements is that when a suspicion of a link to a pollutant can be established, bio-impairment should qualify a site for Category 5; otherwise, those statements are meaningless. Consequently, in our 3/15/04 resubmission of data, we presented reasons to suspect links between all of our bio-impairment data and specific pollutants, and *none* of those claimed links were acknowledged or responded to in any way in DOE’s 11/3/04 draft list. Earlier this month, we asked DOE Water Quality Program official Chad Brown why there had been no response to these claimed links, and he responded that it didn’t matter if links were made because “all bio-impairment data is going to result in a 4c listing, period.” This seems to make clear that the above-quoted DOE statements are indeed meaningless, or else not being properly applied. Specifically, we submit that a reasonable policy would be to list bio-impairment in Category 5 if the same site qualified for at least Category 2 in a specific pollutant, and if the bio-impairment data indicated impairments specifically related to pollutant-tolerance. (For example, the B-IBI includes two metrics specifically relating to pollutant-tolerance.) We will have more to say about this suggestion below.

B. Braley goes on to say that “EPA has emphasized the need to have a specific pollutant identified in order to conduct a TMDL,” and that “Policy 1-11 clearly states the need to identify a pollutant to go on Category 5.” Here again, Braley fails to respond to several specific points made in the Locke/Robertsen letter:

1. In EPA’s “Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act,” EPA advises that biologically-impaired waters in which causes are unknown should be listed in Category 5:  
States should include impaired and threatened waters in Category 5 when a water is shown to be impaired or threatened in relation to biological

assessments used to evaluate aquatic life uses or narrative or numeric criteria adopted to protect those uses ***even if the specific pollutant is not known*** [italics added].

These waters should be listed unless the State can demonstrate that nonpollutant stressors cause the impairment, or that no pollutant(s) causes or contribute to the impairment. Prior to establishing a TMDL for such waters, the pollutant causing the impairment would need to be identified. EPA has

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developed guidance to assist States in identifying the causes of a biological impairment.

We do not believe that non-pollutants or natural conditions completely explain the biological impairments indicated in Clallam County streams by our data. Suspected pollutants at our impaired sites include the following:

- Heat from lack of forest cover
- Sediment from upland and in-channel erosion
- Nutrients from fertilizers and increased solar exposure
- Toxics and pathogens from stormwater runoff and septic systems
- Low dissolved oxygen from a variety of causes, including inadequate shading

In some cases we have data indicating such pollutants. However, lack of data on the above pollutants does not rule out the involvement of these factors. In fact,

our B-IBI data itself suggests the possibility of the above pollutants, since “impaired” scores almost invariably show a decline in species intolerant to the types of pollutants listed above. And at any rate, EPA places the burden on the **state** to “demonstrate that non-pollutant stressors cause the impairment, or that

no pollutant(s) causes or contribute to the impairment.”

2. DOE’s own policy is not consistent. Many of the “pollutants” for which the State has set standards do not meet the definition of pollutants as defined by DOE’s Policy 1-11—“inputs that are discharged or otherwise introduced into the water, such as toxic chemicals, waste material, nutrients, sediments, and heat”. For instance, neither dissolved oxygen nor temperature is a pollutant itself—some other influence causes these indicators to show signs of impairment. In the case of temperature, the actual pollutant is heat, as the policy indicates, but the heat could come from a variety of sources which would need investigation. A TMDL

for a water-body with temperature impairment would begin by assessing the causes of that impairment, and then address those causes so as to meet the “target” set by the temperature standard. In the same way, low B-IB I scores are also a sign of impairment, the causes of which would require further investigation and action, in order to meet the “target” set by a “healthy” B-IBI score.

3. Other states (including New Jersey, West Virginia, and Ohio), applying the same EPA directives, list biologically-impaired sites on their 303(d) lists,

even if the cause of the impairment is unknown. If their scientists suspect particular pollutants causing the problem, those are listed; if not, the cause is listed as “unknown,” following the EPA guidelines cited above.

Braley’s letter makes no response to these points.

C. Braley states, “Further, there are no numeric biological criteria in the state’s water quality standards that would provide a better basis for a Category 5 listing.” Again, she ignores comments made in the Locke/Robertson letter:

1. It is true that Washington State does not have a specific water-quality criterion related to biological impairment. However, WAC 173-201A-030 does list the following “characteristic uses” of Class AA and A waters (which comprise all the waters monitored by Streamkeepers): “salmonid migration, rearing, spawning; and wildlife habitat” (which is defined in WAC 173-201A-020 to include all “other aquatic life,” which would include benthic macroinvertebrates). Since wildlife habitat is a designated use, and the B-IB I measures impairment to aquatic life, it directly measures impairment to a designated use. Also, since the B-IB I correlates with the ability of a water body to sustain healthy anadromous

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salmonid populations (Karr et al., 2003), it also indicates impairment of that beneficial use. And the Clean Water Act makes clear that water quality criteria must be sufficient to protect designated uses of the waters, in order to meet its goal to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” (Karr et al., 2003). Therefore, if Washington State’s water quality criteria are not sufficient to protect designated uses, those criteria violate the clear intent of the Clean Water Act.

2. DOE’s own Water Quality Policy 1-1 provides for 303(d) listings based on non-numeric standards. We refer to the “Narrative Standards” section on pp. 26-27:

In addition to... numeric standards..., the assessment of water quality can be based on narrative information. Commonly, for example, a listing may be based on narrative information showing that fish stocks are adversely affected by pollutants in the water, as distinct from numeric information that measures the level of the pollutants directly. A segment will be placed on the 303(d) list on the basis of violating narrative standards relating to pollutants when the information regarding that waterbody segment includes all of the following:

- Documentation of environmental alteration related to deleterious chemical or physical alterations, such as nutrients or sediment deposition . .
- Documentation of impairment of an existing designated use related to the environmental alteration on the same waterbody segment, and
- Identification of a human contribution to the environmental alteration.

These criteria for 303(d) listing based on narrative standards correspond to our suggestion in A.2. above. Specifically:

- *Environmental alteration*: A Category 2 or 5 listing for a pollutant should be sufficient.
- *Impairment of a designated use related to the environmental*

*alteration:*

Our B-IBI data should be sufficient, when supported by specific sub-metrics indicating an impact from pollutants (see our note in A.2. above).

- *Identification of a human contribution to the environmental alteration:* We provided a general list in the Locke/Robertson letter, as well as a site-specific list in the "Summary of Calls" spreadsheet which we sent to DOE on 3/15/04.

According to these criteria, most of our bio-impairment calls should qualify for 303(d) listing.

D. Braley says that DOE rejected our suggestion to create a new Category 4d, which would require further investigation when bio-impairment was found and the causes were unknown, because "Policy 1-11 did not include this new category [and] we felt it would not be in the best public interest to add it after the fact, since the public had not had the opportunity to comment on it."

1. DOE knew that Streamkeepers would be submitting biometric data while Water Quality Policy 1-11 was still in draft form: in March 2002, we informed Matthew Green, then DOE's Water Quality Program Policy official, that we would be submitting such data. Since revisions to Policy 1-11 were not finalized until September 2002, DOE had ample time to consider the implications of such data for their Water Quality Assessment.
2. As far as "public interest" is concerned, we suggest that it would be a greater violation of the public interest to fail to perform further investigation of a site that is known to be biologically impaired~

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E. Finally, Braley correctly states that “it appears your main concern is that the biologically-impaired waters will be set aside and ignored if left on Category 4c.” She goes on to explain that DOE plans to categorize the 4c listings and then explain how each of these “habitat-related concerns” can be dealt with by other means besides TMDLs, “to ensure that the listings on Category 4c are not set aside and ignored.” Here we find the heart of the problem: biological impairment is not a sub-category of “habitat-related concerns,” but rather an indicator of broad-scale ecological degradation which calls for further investigation to determine the source of the problem, whether pollutant-related, habitat-related, or otherwise. As Locke & Robertsen stated, biometric data can serve as an early-warning system to identify degraded and impaired streams before the problems become intractable—but only if those data trigger further investigation.

Therefore, we make the following alternate recommendations, in order of preference:

1. Reclassify all of our Category 4c bio-impairment listings to Category 5, following the arguments made in B. above; or
2. Reclassify all of the Category 4c bio-impairment listings that meet the criteria described above in C.2. to Category 5, and place the remaining listings into a new Category 4d, “Requiring further investigation,” as described above in D.; or
3. Reclassify all of the Category 4c bio-impairment listings into a new Category 4d.

Sincerely,



Ed Chadd & Hannah Merrill

#### References

Karr, J.R., R.H. Homer, and C.R. Homer. 2003. EPA’s review of Washington’s water quality criteria: An evaluation of whether Washington’s criteria proposal protects stream health and designated uses. National Wildlife Federation, Seattle. 25 p. (NOTE: A copy of the above paper was sent to Dick Wallace at DOE on October 1, 2003 by Jan Hasselman, counsel for the National Wildlife Federation.)

- C: Susan Braley, DOE Water Quality Program  
Thomas Locke, Clallam County Public Health Officer  
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