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Utah Division of Water Quality

Re: Comments on Utah's 303(d) list

Submitted by:

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General Comments:

Preparation of the 303(d) list is a monumental task and I applaud DWQ's effort to assemble this important list of impaired waters. Similarly, it is important to disseminate and seek comments on the 305(b) methods chapter. However, it is difficult and time consuming to toggle back and forth to understand the assessment methods and the resultant decision to list a stream segment or lake. This has been particularly true in understanding how reference condition was identified for comparison of O/E in the Jordan River. In short, it is just about meaningless to comment on the 303(d) exclusively because virtually all comments would be, will be, or are related to the manner of performing assessments.

It is disappointing that after the many hours that many commenters spent in providing constructive written comments on the 303(b), that precious few were considered in order to improve assessment methods.

In particular, the use of a single metric for determining whether the macroinvertebrate community is fully supporting is an unacceptable minimal use of available and more descriptive metrics that have wide-spread use in all other states, including those that include the O/E metric. The primary shortfall is that the simple O/E fraction doesn't provide a clue as the potential cause of a low score. For example, with the descriptors including average watershed values for things such as temperature, slope, precipitation, etc., there is no way to determine whether a fractional change in O/E is due to natural river continuum

principles vs low DO, TDS, an unmeasured toxic, or simply being smothered by depositing material as a result of dewatering the channel.

As opposed to other measured parameters or constituents which are considered true stressors, phosphorus, by itself is not a stressor and has no direct effect on macroinvertebrates or fish. Rather, because it is also an essential nutrient for all members of the food web, there are minimal requirements to sustain life and because phosphorus exhibits varying effects at higher concentrations, due to other variables such as substrate stability, turbidity, its concentration relative to N and C, etc., it is impossible to designate where beneficial concentrations are exceeded (appropriate criteria) without site-specific studies to understand the influence of these many covariables. As a prime example, it has been indisputably demonstrated that excessive SOD, resulting from settling allochthonous organic matter, as a result of vast dewatering of the channel, is responsible for low DO in the Jordan River rather than the more popular link between P, excessive algal production and subsequent DO sags due to algal decomposition. Therefore, this number has little interpretive value for TMDL development or restoration effort without a thorough evaluation of other covariables. This is particularly the case for the Jordan River. Moreover, the development of a theoretical reference condition for the Jordan River is simply guesswork, which, to this day, has not been thoroughly vetted by peer review or local or other experts. In these days when transparency is the mantra, to develop and use a singular and obscure metric to make such important and potentially very expensive decisions is inappropriate. As with efforts for transparency with recent projects such as the Utah Lake Water Quality Study, I suggest that DWQ follow suit and re-establish a TAC to open up for review the O/E metric and to evaluate other usable metrics and particularly for valley streams.

Concerning toxic metal assessment:

Many streams statewide are being added to the 303(d) list. It appears to me that this is likely due to the change in DWQ's assessment method to reduce the sampling requirement to measurement of only two exceedances of a total of 4 samples – regardless of timing or frequency of sampling. This can lead to biased sampling or even the use of outlier data. I suggest that DWQ return to performing a minimum of 10 samples and determining whether 2 or more samples exceed

the criteria. This will reduce the likelihood of using outlier data and add more credibility to the data set before additional time and money is spent on TMDL development.

Specific comments:

Jordan River: Please explain why the Jordan River from Little Cottonwood Creek to 7800 South was impaired for macroinvertebrates while the segment from 7800 South to 14600 South was fully supporting (e.g. the stream gradient is steeper and the substrate is generally larger and more stable in reaches that are closer to the Narrows.

Similarly, please explain why the segment from North Temple to 2100 South is impaired for total P when numeric nutrient criteria do not exist for any stream segments except headwater segments. In fact, in consideration of the information discussed above, no segments in the Jordan River should be listed for phosphorus.

For clarification, I thought that DWQ had agreed to site-specific temperature criteria or was adopting warm-water temperature criteria in segments 5 and 6 because of misclassification and the inherent dewatering of the channel. Please clarify.