

Below are the main points/action items I noted from the February 18, 2014 Model Work Session:

Upcoming Model Work Schedule

- February 26th – DEQ seeking TAC recommendations to LBWC to support AQUATOX calibration
- March 13th – DEQ to ask LBWC to vote to support the AQUATOX model calibration version: “2014_0203_ATX_LBR_Linked_Existing Conditions_DDS”

Item Updates

- On February 5, 2014, DEQ completed the LBR AQUATOX model calibration version, “2014_0203_ATX_LBR_Linked_Existing Conditions_DDS,” import files, and model report. DEQ provided the files to the LBWC, TAC, and Model Workgroup, and placed them on the “AQUATOX Model Files” ftp site, accessible through the DEQ LBR WAG webpage at: <http://www.deq.idaho.gov/regional-offices-issues/boise/basin-watershed-advisory-groups/lower-boise-river-wag.aspx>
 - EPA submitted the only written comments pertaining to the 2014_0203 model calibration
- Discussion of the overall model calibration included the following comments:
 - Tom (HDR)
 - The model calibration is a substantial improvement, with a better approximation of current and historical data. This was done without skewing other aspects of model results.
 - Mike Mieyr (City of Nampa)
 - Need for additional summer periphyton data.
 - Michael Kasch (HDR)
 - The tables and plots are very strong and simulation matches observed data very well.
 - The model and data is what it is and we have done the best we can.
 - Matt (Brown and Caldwell)
 - The model is vastly improved; agrees with Tom and Michael.
 - Kate (City of Boise)
 - Fantastic job; hard to improve upon.
 - Robbin (City of Boise)
 - Model is as good as could be.
 - Important to emphasize the error bands.
 - Lee (City of Caldwell)
 - The model is a good representation.
 - Additional summer periphyton data still needed.
 - Dick (Eco Modeling)
 - Darcy did a great job on the calibration and documentation.
 - Ben (EPA)
 - Good report and documentation.
 - Tricky part is dynamically estimating periphyton.
 - Request for further explanation of the sloughing function in the model.
 - Darcy – fcrit and sloughing are more important to high and low nutrient diatoms. Chris Mebane had provided empirical and anecdotal evidence

- from field studies that diatoms, at a localized scale, tend to reach max biomass within 30 days and then approximately 90% will slough.
- Dick – high nutrient diatoms are “flashy” and more susceptible to high growth and sloughing rates. Sloughing in the model also utilizes a biomass dependent term.
 - Jack - Need to think of growth rate dynamics; separate accumulation from rate of growth. Model is averaging sloughing over an entire reach. Sloughing is important and the reasons behind this are important.
 - Troy – DEQ will further review and describe the sloughing function in the model report.
- Jack
 - The model calibration is a huge step forward and DEQ is to be commended.
 - However, it is just a model and a gross representation of a complex system.
 - How do phosphorus accumulations and loss move through model compartments?
 - Dick – There are numerous variable sets available in the model to examine the mass balance.
 - Bill (EPA)
 - Is in agreement with positive comments from others; this is the best effort to date.
- Additional comments regarding the model and report limitations, and questions about future processes included:
 - Ben
 - Questions still remain about how to deal with the current periphyton estimations relative to historical measurements?
 - Robbin – suggest refining the use of historical periphyton data due to changes in sampling methodology, variability, etc.
 - How will critical conditions be addressed? Need to consider “worst case” periphyton scenario for TMDL. AQUATOX should be used as one of the multiple lines of evidence.
 - Tom
 - Critical conditions and other environmental factors besides flow can be important for periphyton growth.
 - The model can help with evaluating trading scenarios down the road.
 - Matt
 - The AQUATOX model would be better used in a relative sense among multiple lines of evidence.
 - Recommend to the TAC that the model work group continue to work on scenarios and allocations due to knowledge of model function and limitations.
 - Kate
 - How to address the AQUATOX vs. USGS mass balance models?
 - Michael – The AQUATOX and USGS mass balance models are producing similar TP concentration results.
 - Robbin – USGS is for TP mass balance; AQUATOX is for nuisance algae relationships.
 - Troy
 - AQUATOX will be important to develop and evaluate scenarios and should be used as a line of evidence, as appropriate.

- Will consider other environmental conditions, critical conditions, worst case scenarios, etc. in subsequent TMDL development discussions, as appropriate.
- Suggests that some derivation of the model workgroup (as Ben suggested, a “Techno-Policy” group) continue to develop scenario and allocation recommendations to the TAC and WAG.

As always, please let me know what I missed or misinterpreted and thanks for your participation today! Cheers,

-Troy

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