

July 2020

Revision of the 2019 Deschutes Water Quality Study



While preparing an article about water quality on the Lower Deschutes River for submission to a peer-reviewed scientific journal, our lead water quality consultant shared his draft with the lab that analyzed periphyton samples for our multi-year water quality study released in the summer of 2019. In reviewing the draft, the lab discovered it had incorrectly calculated the prevalence of four periphyton taxa (out of over 400 total taxa). This laboratory error affects the 2019 report's discussion and interpretations of nutrient and algae dynamics in the Lower Deschutes River.

In light of this, our consultant is revising the report. The extent of revision required is not yet fully known, but we do know that parts of the study involving periphyton data and analysis, including conclusions made about nutrient/algae dynamics, will need to be revisited.

1. Why is this error coming to light now, a year after the study was released?

The laboratory error occurred for only one of the dozens of water quality parameters analyzed in the study, so it was not obvious amidst the tremendous volume of data. It's unfortunate that the error was not spotted earlier, but we're grateful it has since been discovered.

Correcting the error and reanalyzing the data is an important step to help inform our ongoing scientific review and dialogue on Deschutes water quality. Reviewing and revising the study in light of this information maintains our long-standing commitment to a science-based approach to decision-making on the Deschutes. We always want to work with the best data available.

2. How big of an impact does the inaccurate data have on the study's conclusions?

We know there are inaccuracies in the periphyton data that resulted in an overestimation of the presence of Rivularia, a cyanobacteria genera in the Deschutes River. This means that the study's analysis of algae species composition in the Lower Deschutes River will need to be revised, as well as the conclusions drawn from this algae data.

We don't expect the revision to affect all of the study's conclusions. Most of the parameters studied, including temperature, dissolved oxygen, pH, zooplankton, and chlorophyll, remain unaffected by the error. That said, water quality dynamics are complicated and interrelated, so some aspects of the study, especially discussions of nutrient chemistry, will need to be reviewed and may be revised.

3. What parts of the study will be revised or reanalyzed?

Section 6 of the study focuses on water quality conditions in the Lower Deschutes River. The periphyton portions of this section, and subsequent analysis and discussion in sections 8 and 12, will need to be revised. We do not anticipate needing to revise portions of the study focused on background information or methods (sections 1-3), the project reservoirs (sections 4-5), or the water quality modeling (sections 9-11).

The models used in the study are robust and useful for many purposes, but are not sophisticated enough to interpret complex algae dynamics. Therefore, the periphyton data error will likely have little to no effect on the modeling. 1

4. Have any other projects or studies been affected by this lab error?

The Summer 2019 Water Quality and Periphyton Study will also be reviewed. We expect only minor revisions are needed for this report. Aside from the additional data collected in Summer 2019, the error affects only the periphyton data used in the 2019 Water Quality Study.

5. What are Portland General Electric and the Confederated Tribes of Warm Springs doing to address water quality concerns in the Deschutes Basin?

Shortly after the study's initial release, the Pelton Round Butte Fish Committee formed a water quality subgroup to discuss the results and explore next steps. This group has met multiple times since last summer, investigated management options, and has drafted recommendations for Fish Committee consideration.

The subgroup has identified some actions that will likely benefit water quality in the Deschutes Basin, including initiatives to reduce phosphorous and nitrogen in the Crooked River. The Fish Committee is currently exploring options for how best to support this ongoing work. The subgroup also recommends further study in the reservoirs to help us understand the effects of nutrient reduction as well as investigation into the potential benefits of a "flushing flow."

We recognize that delays are frustrating. We will continue to evaluate and investigate water quality management options in the meantime, but we know it's important to have all the data at our fingertips before moving forward with a final plan.

6. When will the revisions be complete?

This is an intensive undertaking and will have to be scheduled around other work our consultant has underway. We expect to be able to share results and a revised report in December 2020.

Please email deschutes.passage@pgn.com or visit portlandgeneral.com/waterquality for more information.