

28-Jun-17

Dr. Stefan Bertliss
Associate Editor, *Freshwater Biology*

Dear Dr. Bertliss,

Attached, please find a revision of our manuscript titled "Urban infrastructure influences dissolved organic matter quality and bacterial metabolism in an urban stream network" (FWB-P-Feb-17-0064) by CP Arango plus 8 other co-authors (originally submitted under a different title, but changed in response to Reviewer 2's comments). This revision incorporates the comments of two reviewers who found many ways in which this manuscript could be improved. The biggest concerns, shared by both reviewers, were that our conclusions about "widespread carbon limitation" were too ambitious given the limitations of the data, and that our methodology and interpretation of the data needed clarification. In response to these concerns, we have revised our language and tone to be more careful about our conclusions, and we clarified Reviewer #2's concerns about our EEM methodology. In particular, we include more detail about the IFE and our analysis of data with and without the inner filter corrections showing <5% difference. Although we took Reviewer #2's advice to perform PARAFAC analysis, the PARAFAC model could not be validated with all our seasons together, so they cannot directly compared. Therefore we continue to rely on the EEM metrics to compare relative differences in DOM quality.

Reviewer 1 had also commented on unclear explanations of some of the EEA metrics we used, and we clarified those explanations and removed a redundant analysis we had performed to simplify and clarify the results. Reviewer 2 recommended estimating the amount of labile C removed in transit through buried reaches, and we used a nutrient spiraling approach to estimate a first order loss coefficient. Although this showed the potential for significant consumption of labile carbon, we could not confirm this pattern in our other data, so we include a description of our approach in our response to reviewers, but we do not include the data in the paper. Reviewer 2 also recommended clarifying our management recommendations, which we have revised to be more in line with our main findings, and improving our figures which have been significantly revised. In particular, one result which had been previously shown in a table, is now shown in a figure that is much easier to interpret. You will find our detailed responses to these major and many minor points that were raised in our attached response to reviewers.

We appreciate the opportunity to revise and resubmit our work, and we hope you find the revisions we have made in response to the thoughtful reviews have improved this manuscript. Thank you for reconsidering this manuscript, and we look forward to hearing from you soon.

Sincerely,

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