Biogeosciences Discussions

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Comment on bg-2020-485

Anonymous Referee #1

Referee comment on "Influence of land use and occupation on the water quality of a microbasin in the southwestern Amazon" by Alan Gomes Mendonça et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2020-485-RC1, 2021

The manuscript presented the results from a basin-scale water quality survey conducted through four seasons in the southwestern Amazon. Continuous progression of anthropogenic disturbance in the area has developed serious deterioration of water environments and scientists are highly expected to provide insights for resolving and managing/controlling the problems. In this context, the authors only reported the measured values for several parameters, failed to identify research questions based on knowledge previously accumulated (known and unknown) and, accordingly, were unable to emphasise the impacts of this study on academia and society. Hence, I evaluate the manuscript is not at the level of publication in Biogeosciences as an original article with a decision of Rejected.

Major comments:

- In Abstract and Introduction, what do you mean by “diagnose”? The objectives have not been specified due to lack of establishing the research question.

- Explanation on the methodology introduced by the authors to analyse “influence of land use and occupation” is critically insufficient and illogical throughout the manuscript.

- L130-142: What is this analysis on temperature for in the relationship with the following water quality parameters?

- L148, 197, 230, 251, 259: For all of transparency, phosphorus, nitrite, EC, Chl.a and bacteria, no significant seasonality was examined. Was it as the authors expected or unexpected before the analyses? What does “objective of identifying possible temporal variations” mean by? What was the hypothesis originally?

- L148-152, 168-173, 184-185: The authors tried to discuss on the pollution source by using concentration data only, however, need another analysis on pollutant loading (concentration and river flow) for that purpose.

- L153-155, 238-240: Those descriptions on phosphorus and Chl.a are not discussions deduced from the obtained results in this study, and should not appear in Discussion

section.

- L193-196: What would be a logical relationship between “significant increase in the LW for ammonia” and “highest nitrate in HW and HW/LW”? I do not understand the mechanism of “a longer time interval for contamination”.

- L208-2009: I do not agree “As can be observed” and “This result can be correlated” in Figure 5a.

- L210-212, 221-224: For insisting those conclusions, the authors need to present TOC and its correlation with transparency.

- PCA in L260-272: The meanings/interpretations for Axis1 and Axis2 are necessary at minimum in basic discussion on PCA. The two obvious groups (P1,P2,P3 and P4) should be first assessed by comparing to the interpretations for the axes. “These results are similar to those reported” makes no sense without detailed discussion.

Minor comments:

- L85 “using 95% ethanol”: Not explaining the correspondent analytical method appropriately.

- “3.1 Land use and occupation” should be moved to Study Area in Methods section.

- L108: figure 3 > Figure 3

- Figure 2: What are “Colorful Composition RGB” for? This figure can be combined with Figure 1.

- Table 2: Errors should be added for each.

- Table 3: What is this figure for?

- Figure 6: Please confirm if F1 and F2 were switched.