

Dear Editor,

We want to thank the reviewers for their valuable contributions, which allowed us to make significant changes to the manuscript. The new version is more concise; we made a careful review of the text, compacted ideas and excluded redundant parts. We also optimized figures and tables to facilitate understanding. We attempted to answer most of the questions, the following is the justification for the unanswered points.

Attached is both the new manuscript.

Best regards,

Authors

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**Reviewer 1**

- We assume that hydrological changes generate ecological responses, even if not yet proven for all indicators (Poff and Zimmerman 2010, Richter et al. 2012, see references). We recognize that the ideal would be to establish ecological relationships for each indicator, however hydrological studies on a sub-daily scale are still a challenge for tropical regions. Studies on this scale need to be developed to show the problems, and to arouse the interest of research in ecology.

- Considering that the study area presents a marked seasonality, with two well-defined hydrological periods (Figure 3), we believe that the representation of a characteristic month of each of these periods is sufficient to describe them. We also recognize that the use of long historical series would allow for a more refined look, especially for events with long turnaround times. But sub-daily monitoring is scarce, and there are currently frequent flaws in the data, making the validity of long-term timeseries suspect.

- Considering that our indicators are daily, we believe that the statistical analysis is robust and adequate to test the hypothesis that run-of-river hydroelectric plants alter the sub-daily hydrological regime. A study carried out by Fantin-Cruz et al (2015, see references) published in the Journal of Hydrology, used the Wilcoxon paired test, with only seven samples, to prove the hydrological alteration caused by a hydroelectric plant. In this article we use at least 30 pairs of samples.

## **Reviewer 2**

All suggestions were answered.

## **Reviewer 3**

We made a detailed revision of the text, with reorganization of the topics, as indicated by the reviewer.

## **Reviewer 4**

We rewrote the methodology to meet the reviewer's suggestion. We recognize in the text that the magnitude of the changes (variation in flow) do not appear to be high, but they significantly change the frequency of their occurrence outside the expected natural range for the period. As mentioned (Reviewer 1), we believe that changes in the hydrological regime outside the natural variation bring ecological consequences, the characterization of the regime is a first step. In addition, we intend to draw attention to sub-daily changes caused by hydroelectric dams, a topic that is still little researched in tropical regions. In addition, we propose a methodology for evaluating and quantifying changes in this scale.

Part of the discussion was changed, we tried to make clear the issue surrounding the topic and its environmental and management implications for the Pantanal. Despite not having scientific studies into the environmental impact of this hydroelectric facility, we looked to records in local newspapers regarding the operation of this facility. We located 4 records of fish deaths in the Itiquira River, one of these we were able to associate with hydrological changes caused by the operation of the hydroelectric dams. During the other three fish kills, the hydrological data were either nonexistent or flawed. So, we decided to add this information to the discussion, to demonstrate the occurrence of these events and the needs for further studies.