

## ***Interactive comment on “Carbon and nitrogen dynamics and greenhouse gases emissions in constructed wetlands: a review” by M. M. R. Jahangir et al.***

### **Anonymous Referee #1**

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The review paper by Jahangir et al. on C and n dynamics in constructed wetlands (CW) does in general deserve to be published, but lacks some focus, which needs to be addressed before publication. In particular I do not see what the sections 2 (physical and hydraulic properties) and 8 (N transformations) add to the paper. The properties discussed in section 2 are not connected to the C/N dynamics not the greenhouse gas emissions. Therefore, I do not see the benefit of including this section. As to section 8, this is largely a textbook-kind description of various N transformations (to be found in a multitude of textbooks) and no linkage to CW's is made. Therefore, I recommend omitting these two sections. In addition, Table 1 as well as Figs. 1-4 are

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very confusing and only to a limited extend informative. I therefore suggest omitting these as well are to significantly improve the readability of those. Finally, it would be helpful for the readers if each section is ended by a sentence, summarizing the most important information. Most sections contain a lot of detailed information, which is why it is difficult to immediately grasp the most important information. The authors could help the readers by providing a summarizing sentence.

Specific comments: All abbreviations in the text need to be defined, which is not the case at present. p. 7616, l. 5: “removes N to remain in the system” sounds contradictory to me. p. 7618, l. 2: IPCC (2014) not in reference list p. 7618, l. 16: “isotope tracing” is a more common used term p. 7618, l. 25: maybe worth mentioning the potential for natural abundance ( $^{15}\text{N}$  and  $^{18}\text{O}$ ) studies to investigate the fate of N. p. 7619, l. 22: how can  $\text{CH}_4$  emission remove N? p. 7620, l. 1: what is meant by “good number of studies”? Based on Table 1 number of studies seems quite low. p. 7620 l. 10: suggest to start with an average number based on Table 2. In the following text more studies are mentioned. Why are those not include in Table 2? p. 7623 l. 13-15: too detailed? p. 7624 l. 5ff.: this paragraph is not well structured. Some sentences are not well connected and the authors jump back and forth between topics. Please restructure the paragraph. p. 7624 l. 9: many of the before mentioned pathways transform one Nr species to another. So the term emit might be misleading. p. 7637 l. 15: can you give examples for the “conservative tracer”? Legends for Tables and Figures should include used abbreviations.

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