

Interactive comment on “Wetland eco-engineering: measuring and modeling feedbacks of oxidation processes between plants and clay-rich material” by Rémon Saaltink et al.

Anonymous Referee #1

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General Comments: Understanding the impacts of vegetation on the biogeochemical cycling of nutrients is important, especially in newly created systems, and this manuscript helps to examine how these cycles differ based on different substrates. When discussing the systems, the use of the term “building material” to refer to sediment seems a bit odd. Maybe something along the lines of “introduced substrate/sediment” or “donor substrate/sediment” would be more appropriate. The introduction, while it includes aims, is lacking clearly defined, testable hypotheses. Overall, the entire manuscript needs more information on statistical analyses, particularly what tests were used to find the p-values listed (mainly in the tables), as well as additional p-values throughout the Results and Discussion section.

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Specific Comments: Need a statistical analysis section within the Methods to outline the statistical program that was used, the statistical analyses that were performed and any data transformations that were necessary. Lines 191-195 (1st paragraph of Results and Discussion): Paragraph would be better suited for the Methods section of the paper. Need to include more p-values within the text, even if they are not significant, when you mention a treatment being different from another. When writing p-values make sure you include some information on the test that you used for the analysis. The size of the pots used to grow *Phragmites australis* seems small for the size of the plant. Do you have any information on whether or not the plants had become pot bound, which could cause wilting, discoloration of leaves, and stunted growth? The text in the figures and some of the tables is difficult to read due to font size. Figures 1, 2, 3, 4, & 5: If possible, make the 3 soil treatment labels (above graph columns or in legends) larger. Figures 3, 4, & 5: Mudsand and Clay bars are difficult to distinguish in black and white, it may be better to choose a pattern or solid color that would provide more contrast.

Technical Corrections: Line by line technical corrections include: Line 95: remove “plants of” and make sure wording is either all singular or all plural; Line 120: Typo, “form” in this sentence should be “from”; Line 418: Make sure you are consistent in using either all singular or all plural words; Lines 425-426 “in the future wetland” change to “in created wetlands”.

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