Solid Earth
Discussions

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Interactive comment on "Distribution of inorganic phosphorus in profiles and particle-size fractions across an established riparian buffer and adjacent cropped area at the Dian lake" *by* G. S. Zhang and J. C. Li

Anonymous Referee #1

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Dear Topical Editor, I am sending you the comments for the manuscript (SE-2015-100). The manuscript analyses the distribution of inorganic phosphorus in profiles and particle-size fractions across an established riparian buffer and adjacent cropped area of the Dian Lake. The subject is also meet the general scope of the SE. Eutrophication of water body is widely concerned, owing to the effect of land use change and the typical study region, the paper is of meaningful. Still there are weaknesses that have to be corrected prior to publication. First, the introduction should be improved, both in structure and logic. Second, the main focus should be on improving the interpretation

of land use effect-possibly integrating some of the vegetation effect that mentioned in the Materials and Methods. Third, the result and discussion part would be extremely interesting to discuss literature from other regions to extend the context of the paper, particularly some new references in terms of eutrophication (such as other typical region Chaohu Lake, Tai lake of China and other new references worldwide).

Specific comment

1 Introduction

The introduction should be restructured, especially from Line 8 to Line 25, page 3225. From line 8 to line 17, recent research results related with the study should be cited, In addition, from line 18 to line 25, please also adjust the paragraph. According to my understanding, as you mentioned, Fe-Pi and Al-Pi would be existed besides Ca-Pi, however, why they were not focused in this study? It seems that the author want to describe the method that they used, if so, please re-interpreted this part logically. Finally, there is also a lack of the critical part in the introduction, such as the identification of knowledge gaps. From line 8 to line 25, the author listed a number of studies, and the most important issue I think is to identify what has been finished and what has not been done, but to be solved in the current study. Therefore, please reorganize the introduction explicitly.

2 Material and Methods

In the site description, the author mentioned two plantations. Vegetation plays critical roles and impact on soil profiles significantly. Here I suggest the general information of vegetation in the buffer areas of the 3 sites are necessary to be introduced.

Page 3226, line 22 and line 24, how to define the drought season and rainy season? The exact months? Please clarify this part in order to make a better understanding for your sampling period (during April and May. . . . . .)

Meanwhile, some references are better to be added to support the sampling method

(Line 1-5, Page 3227).

Furthermore, I found the author used the USDA system for soil texture classification in the result and discussion(Line 21,Page 3228). Nevertheless, it should be introduced in the material and methods in advance, please illustrated the method of soil texture classification clearly in 2.3, page 3227.

Finally, for the data analysis, please describe the significance level and data expression in detail.

3 Results and discussion

With regards to the Results and Discussion, I suggest that it could be separated into two parts. There is no doubt that this part would be extremely interesting to discuss literature from other regions to extend the content, however, it difficult to find some new discoveries in the current study. Instead of this, what could be found are some commonsense points and reports from long time ago (line 8-11 page 3230, line 15-17, Page 3232). Although the results were expressed well, the discussion in each sub-section is weak, particularly it could not find any new references from other riparian buffer zones. Thereby, I recommended that the author should be revised this part carefully and compared with the results from recent studies. Line 4-7, page 3231, please use "R SQUARE" instead of "r"

Tables and figures

For the table 1, I am not sure if values should be rounded to the nearest whole number. Generally speaking, it is better to have the least significant digits of the number for percentage. Meanwhile, all tables may also be improved by adding more statistical metrics (e.g Mean +/- SDs or SEs). In addition, lsd should be in capital. Most important, I suggest add a new table to depict the general information of the vegetation in the 3 study site.

The size of the characters in the figures is too small. It should be similar with the size

of the characters in the figure caption. Color map is better to depict sampling sites in Figure 1. Figure 2 to figure 4 should be redrawing, the error line should be added to the line chart directly. Error bar should be also exhibited in Figure 6.