

In this manuscript, the authors developed an approach to optimize the area of reed plantation and timing of reed harvest for lake water quality restoration. The subject matter is important because phytoremediation is an increasingly important method for water quality restoration, and the two variables optimized in this study are key parameters for phytoremediation while no previous research had studied their effects. However, the authors did not provide enough details of their results, and there is no discussion about the basic assumptions and factors that would affect the optimized results of this study. Besides, the English language should be refined to improve the overall conciseness of this manuscript. Based on these facts, major revision is required before possible publication of this manuscript.

1. The overall conciseness of this manuscript should be improved. Certain sentences need to be rewritten because of their misleading meanings, e.g.: Line 25-26, Page 809, '*Phytoremediation can remove nutrients although the macrophyte community also leads to high evapotranspiration, which results in significant loss of water in lakes*'.
2. Line 13-17, Page 810. The authors should explain more on the reason why optimization of plant density is not enough for lake restoration. Also, since both plant density and plant area are both key parameters for lake restoration, the authors should explain why only the plant area was discussed in this paragraph and the whole manuscript.
3. Line 22, P810 to Line 6, P811. There is no need for the authors to discuss the effect of harvest on the water quality after Sep. For the time after Sep, the two systems are the same, since no evaporation or absorption will be occurred.
4. For the ease of understanding, it would be preferential for the authors to list all the equations relating to the optimization process, e.g.: the equations to calculate  $TN_{\text{uptake}}$ ,  $TN_{\text{release}}$ , etc.
5. Several basic assumptions of this manuscript should be explicitly listed, e.g.: the reviewer assumes that one of the basic assumptions of this study is that there is no spatial difference of the water quality in Baiyangdian Lake.
6. Line 19-20, page 814. The authors should explain why '*This value is cited in this study, although the accuracy is suspect because this value differs for different sites*'.
7. Line 4-7, page 821. From the current understanding of the reviewer, there is no spatial difference considering the absorption efficient or transpiration of common reed in this study. Therefore, based on the assumption of this study, the water quality restoration ability of reeds plant near the lakeshore or far away from the lakeshore should be the same. The authors should find other reasons to explain

why *'the effect of reed area variation on water quality is not obvious when the area is larger than 40 %'*.

8. The lake level or available area for reed plantation of each month for each scenario should also be presented, since the available area for reed plantation may be less than the planned area at specific months of a specific scenario.
9. The TN and TP concentration in both Fig 1 and 2 reached zero at July. The authors should explain whether the TN and TP values are calculated to be zero coincidentally or corrected to be zero manually. The authors should also explain the setting of reed growth and transpiration if the TN and TP values are manually corrected to be zero.
10. In the 'Discussion' part, the authors only presented the result of two different scenarios of planting area and two different schemes of harvest. Most parts of these contents could be moved to 'Results'.
11. The authors should cite more literatures in the 'Discussion' part.
12. The authors should discuss on the potential effects of the simplification (e.g.: the lack of consideration on variations of precipitation and evaporation, etc.) process on the final result.