Manuscript Number: essd-2021-227
Manuscript Title: Water clarity annual dynamics (1984–2018) dataset across China derived from Landsat images in Google Earth Engine

Response to editor comments:
Publish subject to minor revisions

1. I believe that the authors have made a great effort to address the comments. However, I am a little concerned with the updated title, which is the most critical piece of information of the paper. I don't think dropping the word "annual" in the title was a wise move. I would like to ask the author to reconsider it before finalizing it for publication. In my opinion, the title could be something like:
   1) An annual inland water clarity dataset of China between 1984 and 2018;
   2) A Landsat derived annual inland water clarity dataset of China between 1984 and 2018.

   Response: Thank you for your valuable suggestion. We have changed the title into the second one you provided, i.e., A Landsat derived annual inland water clarity dataset of China between 1984 and 2018.

2. Please replace "shapefile file document" with "shapefile" in the Data availability section.
   Response: Thank you for your careful review. We are sorry we made such a mistake, and we have corrected it in line 397, i.e., The dataset of water clarity of lakes developed in this study consists of one shapefile containing the annual mean values of water clarity in each lake (size > 0.01 km^2) during 1990-2018, with a temporal resolution of 5-year.

3. Also, small lakes are likely to be sensitive to changes in climate or human activities, and assuming static boundaries for small lakes may impact the accuracy of SDD simulation. I would suggest the authors add a sentence or two in the discussion to clarify whether the assumption could lead to uncertainty in the dataset.
   Response: Thank you for your professional suggestion. We have considered it seriously and added two sentences in the discussion of section 7 in lines 393-397, i.e., In addition, under the influence of climate change or human activities, such as floods and droughts, urbanization, and farmland reclamation, the boundaries for some small lakes (< 1 km^2) may vary greatly, which could cause the uncertainty of SDD estimation (Yang et al., 2021; Zhang et al., 2019). This is a limitation of the assumption for small lakes with static boundaries. In the future, further research on the relationship between the area of small lakes and the accuracy of SDD simulation would aid in addressing this limitation.

References:

Yang, J.,Huang, X.: The 30 m annual land cover dataset and its dynamics in China from 1990 to 2019, *Earth Syst. Sci. Data, 13*, 3907-3925, doi:10.5194/essd-13-3907-2021, **2021**.

Zhang, G., Yao, T., Chen, W., Zheng, G., Shum, C. K., Yang, K., Piao, S., Sheng, Y., Yi, S., Li, J., O'Reilly, C. M., Qi, S., Shen, S. S. P., Zhang, H.,Jia, Y.: Regional differences of lake evolution across China during 1960s-2015 and its natural and anthropogenic causes, *Remote Sens. Environ., 221*, 386-404, doi:10.1016/j.rse.2018.11.038, **2019**.