

Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on **essd-2021-130**

Anonymous Referee #1

Referee comment on "100 years of lake evolution over the Qinghai-Tibet Plateau" by Guoqing Zhang et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2021-130-RC1>, 2021

This is a great dataset that expands 100 years for the lakes in Qinghai-Tibet Plateau. I appreciate the authors' effort to put all these data together in a consistent format and free available to the world. I knew many papers based on the Landsat images have been published, the 1960s data and a few other recent data have been also published, but it is the first time the 1920s data are publishing, also to combine three different types of data into one systematic dataset is awesome. The paper (data together) has revealed a general pattern of lake reduction from the 1920s to 1995, lake expansion from the 1995-2020. This further confirms my thought based on previous data and publications, but not yet published yet. I am very happy this paper did it. the overall writing of the paper is very good, although there are minor grammar/tense errors that can be fixed relatively easy. For example, the paper is primarily written in a present tense, but in some places mixed past and present tenses are used and should be fixed (see line 175 "was" should be "is").

I do have one comment about the 1920 maps/data. I fully understand that it is impossible to validate the quality and accuracy of the data now. But I hope if any possible to give some details on how they actually mapped such a big area, with little or no current technology,..., in some places, these types of information should be there. I know it is hard to find but just curious. Also although the number of lakes (larger than 1 km²) was only 710, but the total area of these lakes are larger than the 1960s (1107 lakes). My guess would be many small lakes not in their map might be just missed due to the reason they really did not see them during the field work, since it was really a big task to walk through all small lakes (just my thoughts). However, the missing small lakes do not impact their results, since the major and big lakes really contribute to the total lake area, which was indeed larger than 1960s. one curious question is that, have authors checked all the same 710 lakes in the 1920, 1960, 1970, ..., 2020? Can you just show the trend and pattern for these 710 lakes? How many lakes in Figure 8?

Figure 6, I see some red outlines, some clearly are the lake boundaries, but others are not. Please make sure they are cleaned...

Line 305, add "due to outburst" behind "a noticeable reduction in area"