

Comment on **essd-2022-250**

Anonymous Referee #1

Referee comment on "Contemporary (2016–2020) land cover across major proglacial regions in West Antarctica and the McMurdo Dry Valleys" by Christopher D. Stringer et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-250-RC1>, 2022

This manuscript developed a contemporary land cover map of West Antarctica and the McMurdo Dry Valleys from the combined Landsat-8 images during 2016-2020, using the unsupervised K-means method. Six sites were chosen for their classification and analysis. I have the following concerns:

- Since their dataset only cover six sites and only one-year map (i.e., contemporary) was provided, which greatly reduces the application value of their dataset. I don't think this dataset will be widely used.
- Although the authors state that they used the Landsat data rather than other high-resolution data (e.g., Sentinel-2) for classification due to their consideration of its long-term series and ensuring future robust and seamless comparisons, I don't think this is a good reason, as only one-year land use map was provided in this manuscript and the land use cover in this area has not changed much over the past few decades. In addition, considering that the spatial resolution of Sentinel-2 is significantly higher than that of Landsat-8, classification using Sentinel-2 data is a better choice.
- I didn't see innovation in their methods. In addition, the accuracy of K-mean classification largely depends on the choice of K value and the selected features. However, I didn't see any accuracy comparisons for different K values and classification features in the manuscript.
- Where are fig. 7 and fig. 8?

Based on the above comments, I don't think the current manuscript is enough to be published in ESSD. Therefore, at this stage I will reject the manuscript, I hope my decision will not disappoint the authors.