**Comment on essd-2022-180**

Anonymous Referee #1

Referee comment on "GWL_FCS30: global 30 m wetland map with fine classification system using multi-sourced and time-series remote sensing imagery in 2020" by Xiao Zhang et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2022-180-RC1, 2022

In terms of the whole workload, there is no doubt that this paper carried out a lot of data processing and analysis. The submitted MS also has good writing. However, I still have some concerns about the method and accuracy of classification results. My major comments are as below.

1. Besides the mangrove, how did you consider other coastal swamp in the classification system?
2. As mentioned, the wetlands have clear seasonal changes within a year? how did you define the final date for the wetland product?
3. Besides the time-series feature? did you consider other features?
4. How did you training the model? One model for the global wetland or one model per grid? There are distinctly phenological differences for the different wetland types and even the same wetland type. Please clarify it.
5. The authors used Sentinel SAR data, why do not produce the 10 m resolution product based on Sentinel 2?