EGUsphere, referee comment RC1
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# Comment on egusphere-2022-580

Anonymous Referee #1

Referee comment on "What determines peat swamp vegetation type in the Central Congo Basin?" by Selena Georgiou et al., EGUsphere,
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The manuscript concentrates on the Central Congo Basin, aiming at to distinguish the reasons why certain regions of the peat swamps are covered by hardwood trees, and other by palms. This problem is tackled by modelling their known distributions by using elevation and meteorological data. As conclusions, the authors detect a range of water supply which enables palm swamps to exist, whereas outside of the range hardwood trees will dominate.

Generally speaking, Cental Congo Basin or its vegetation types are not particularly familiar for me, but as such the premises, applied data, analyses and conclusions appear to be sound and well justified. Language of the manuscript is also good and requires no particular modifications. In addition, storyline is clear and the text itself reads well, which is not the case for all the manuscripts. Some of the chapters are rather long and detailes, particularly results and discussion. But for someone interested in this specific topic, this may be a gread advantage. Considerations as included in the conclusions are also detailed and sound justified.

I have no major concerns regarding to the manuscript, only a few detailed observations which may deserve to be addressed when revising it:

Row 30: maybe reference to Fig. 1 could be on the row where CC is mentioned for the first time (27)
Row 34: increases the carbon stock; does this refer to situation that Cuvette Centrale wouldn't exist? Wouldn't this be easier to say as a proportion of the total carbon stock?
Row 91: as Crezee et al. (2022) land classification map is a data of high importance in this paper, it would be fair to describe a bit of how it was constructed (as well as acknowledging its potential sources of error, which may also affect on e.g. detected anomalies)
Rows 167-171: I'm not totally convinced of the use of STD in this context; it kind of reflects the uncertainty or inaccuracy of the rainfall estimate, but won't indicate the

direction of it. Moreover, high STD may reflect for example a hill or a pit; in the first case it'll probably increase the runoff from the pixel to its neigbours, and in the latter from neighbours to the target pixel. I'm not necessarily suggesting to reject this model term, but use of it is not totally justified, as it won't necessarily indicate any particular tendency per se.
Row 363: what is a "blackwater river"?
Row 419: I'm not sure if "contribute significantly" is the best way to say here; rather, they enable to model the vegetation types at a reasonable accuracy