Interactive comment on "Landscape-scale changes in forest canopy structure across a partially logged tropical peat swamp" by B. M. M. Wedeux and D. A. Coomes

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This manuscript investigates the dual effects of peat depth and logging disturbance on canopy structure in peat swamp forest in Central Kalimantan, Indonesia. The emphasis is on canopy height, shape and various gap size metrics. Data are drawn from 100 plots of 1 sq. km size extracted from airborne lidar data.

Overall, this manuscript is very well written, is thoroughly researched, well referenced and fully contextualised. The main article is well supported by supplementary material, although in places some of this information should to be included (or at least summarised in more detail) in the main article itself to provide a fuller justification of some

of the methodological decisions. Also, perhaps the abstract would benefit from a final sentence highlighting specifically what the findings contribute to the understanding of tropical peat swamp forest ecology and management.

Specific comments: 10986 lines 6-7 (and 10988 line 20): what is meant by high fidelity ALS data?

10986 line 13: this should probably be 'consistent with' rather than 'consistently with'.

10988 lines 17-19: this sentence relates specifically to satellite optical data. Perhaps an additional sentence should be added here to mention studies which have used satellite radar data for tropical forest structure assessment.

10989 lines 25-26: perhaps edit to read 'high fractions of soil or dead vegetation'

10990 lines 2-6: mean canopy height maps were used to determine that logging takes place within 500 m of a logging route, and therefore this was used as a generic buffer to determine selectively logged forest. However, a buffer of 5 km was applied to forest around the Kapuas River. Does the same decision rule of mean canopy height support this buffer size? If so, it is worth adding this to the manuscript, as the methods here do not seem to be quite consistent.

10990 line 10: it is probably worth specifying how many returns were recorded per pulse in the main text, to help contextualise the figure of 2.8 points per sq. m.

10990 line 18: perhaps it is worth stating why the lidar point data were voxelised at a 20 x 20 m horizontal spatial scale (i.e. how does this relate to crown and gap size).

1091 line 4: why extract height metrics from 10,000 randomly selected pixels of the CHM. Why not simply use all pixels in the CHM? This decision should be justified.

10991 section 2.2.2. It is perhaps worth stating how gaps at the edge of the 1 sq. km plots were treated (e.g. gap size measurement was truncated at the plot edge, or gaps were only counted if the centre was in the plot, or gaps were measured if any part was

within the plot, etc).

10993 section 2.3.1. The validity of the relationship between peat depth and both canopy top height and distance to river is fully demonstrated by the supplementary material. However, given that the effects of peat depth on canopy structure is a key aspect of this manuscript, then perhaps a little more information is required in the main article in this section – in particular to state how peat depth was inferred from the two relationships and with what accuracy level.

10995 line 9: was data normality tested or assumed in these cases?

10995 line 23 (and 10997 4): should p values also be stated here?

10996 lines 27-28: was the relationship between the GSFD transition parameter and peat depth tested statistically? (If so, it would be useful to give the r and p values in the text).

10997 line 23: should an R2 value also be quoted in this sentence for canopy top height?

10998 line 1: edit to 'in areas that we had identified as logged'

10998 lines 11-15: In the first half of this sentence it should be made more clear that this relates to gap structural characteristics rather than structure in general.

10998 line 20: 'landscape-scale coordination'. Perhaps this should be correlation, correspondence or relationship instead of coordination?

11000 line 23: should be forest communities (rather than forests communities).

11002 line 10: 'take long to recover' - reword this.

11002 line 18: note that variation in logging pressure did not affect canopy structure, but logging pressure itself clearly did (i.e. this sentence could be interpreted to mean that logging does not affect canopy structure).

11003 line 9: perhaps specify which satellite images Franke et al. are referring to.

11007 line 18: delete 'replace by'