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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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General comments This paper presents an interesting analysis of canopy height and structure (layering, gap size) from airborne laser scanner data, particularly in relation to peat depth and logging intensity. This is a rare opportunity to study the response of forest regrowth in relation to peat depth. The authors do a really good job of the analysis and there are some interesting findings, particularly the strength of correlation of height to peat depth, and the distinction between the regrowth patterns. One or two things arise which could perhaps be better explained/illustrated - particularly the empirical relationship with which peat depth is inferred (not measured). The rest of the

analysis depends on this, and yet it isn't included in the main paper, in the supplement only. There is some validation of this in the Supplementary but I'd like to see this brought into the main paper and discussed in more detail, as pretty much everything else follows from this. One question I had was whether there may be a confounding factor of logging on deeper peat being more tricky in terms of accessibility for vehicles etc so that logging intensity/rate is lower?

Otherwise, I think this paper is clear, sound and of broad interest to readers interested in tropical forests, peat and the use of lidar to estimate forest canopy structural characteristic. I only have a few very minor technical comments which should be addressed before final publication.

Technical comments

Abstract

High-fidelity doesn't really mean anything to me.

l13: consistent

l18: long sentence

l24: canopy structure recovery, as observed by lidar, modulated...

Main

10987 l5: just light

10988 l1: obviously limited - how many?

10989 l21: new paragraph from "We mapped ..."?

10990: why 100 plots?

10991: why 10 000 points? Why height cutoff at 12m? How sensitive are results to these choices & are they arbitrary?

10992 l2: most? Or just various?

10996: visual inspection - any way of doing this quantitatively?

10996 l13: increasingly closer? Clumsy.

10996: do you mean significant in a statistical sense here?

10997 l3: define weak or just give values.

10997 l7: define good or just give values. Avoid qualitative statements like this.

10997 l27: indices

10998 l7: differing?

11000 l20: also, rather than additionally

11001 l17: "more ecologically meaningful scales" - meaning?

11003 l21: no "yet"

Fig 2 - maybe too much info in here to process properly in 1 fig. Would also be useful to have the pareto distribution plots (lower row) for the various cases above ie the different height layers.

Fig 3 - the 'logged' symbols are red on the plots but not in the legend which is a bit confusing. This is also the case for figs 4 and 5.

Fig 3 d is not very useful as it's too hard to tell the difference of the overlaid lines in terms of the colour. This needs to be displayed differently in some way. And why is old-growth grayscale and logged in colour?

Interactive comment on Biogeosciences Discuss., 12, 10985, 2015.