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Comment

***Interactive comment on “Carbon dynamics in
aboveground coarse wood biomass of wetland
forests in the northern Pantanal, Brazil” by
J. Schöngart et al.***

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GENERAL COMMENTS:

This is a very interesting study. It introduces a novel combination of dendrochronological techniques and allometric fitting to improve estimates of above-ground woody biomass for the Pantanal. The results are of significance for estimates of carbon storage and flux for this area of South America. Given the dominance of allometric models which use only DBH as a predictor, this study represents a departure from previous work.

SPECIFIC COMMENTS:

S1033

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Although the study was clearly well done, it has not been presented in report form quite as well as it could have been. I suggest strongly that the Introduction should be tweaked slightly so that it highlights the main points of the study more clearly. There are two main areas which should be changed/rewritten: (1) One of the most important novelties of this study is the combination of tree ring analysis with estimation by allometries. However, tree-ring analysis is mentioned for the first time only on the penultimate line of the Introduction (line 6, p. 2106). This is completely at odds with the Conclusion (p. 2116) where the use of dendrochronological techniques is, suddenly, the whole point of the study. (2) The importance of cambará is over-emphasised in the Introduction: the reader gets the impression that only this tree species is being studied and that the study sites have been chosen for their dominance of cambará. However, as is clear when the reader gets to the Methods and Results, this is not the case. The approach described by Schöngart et al. is not dependent on having a high dominance of cambará trees (e.g. stand 1 has only 10% of this species) and, in fact, the study is estimating biomass of the whole (species-rich) forest, not just the cambará component. I suggest that the Introduction be reworked and mention of cambará be restricted to the Methods. This way, it becomes more clear that more than one species is being studied and that the dendrochronology/allometry technique can be used in other forests too, not just those dominated by cambará (p. 2105).

TECHNICAL CORRECTIONS:

p. 2105 line 13 Even if this paragraph remains in the text (see point 2 above), it should be written more precisely (e.g. "Large areas" is not specific: please put either which areas or an estimate of the Pantanal area in terms of %).

p. 2105 A short sentence should be inserted into the text to explain why the 4 ha studied are representative of the whole 195 000 km² Pantanal: I am willing to believe that they are, but this Introduction does not explain why. Is it because cambarazal forest covers most of the Pantanal? Or, since stand 1 probably can't really be described as "cambarazal" if it only has 10% cambará, what other factor makes these stands

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representative of the Pantanal? If they are not representative of the whole Pantanal, of which part are they representative? Riverine vegetation? gley soils vegetation?

p. 2105 line 24 The brevi-deciduousness of cambará allows the use of dendrochronology for that species only: it does not, of course, imply the method is appropriate for all Pantanal species. Please re-phrase.

Fig. 1 One can find a map of the whole Pantanal very easily online (e.g. http://www.amazondiscover.com/images/map_Pantanal.gif) and when only one point is being highlighted in this region it is not necessary to have a map (the description of the site location in section 2.1 is adequate). Suggest (i) replace it with a much more large-scale map showing the positions of the 4 x 1 ha plots and (ii) the second half of the figure is not essential information and can be removed and replaced with a description in words in section 2.1 (and please insert the source for your data on the Cuiabá River).

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