

Interactive comment on “Windthrows increase soil carbon stocks in a Central Amazon forest” by L. T. dos Santos et al.

Anonymous Referee #1

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This paper uses standard, tried and true methods for quantifying soil carbon concentrations and contents (stocks), and applies them to the very interesting question of how windthrow disturbance in Amazonia affects soil C. The sampling design includes sites that varied in tree mortality during a windstorm seven years earlier, and spanned soil texture gradients. The data strongly support the conclusion that wind disturbance increase soil C concentrations and stocks, presumably by increasing detrital C inputs.

Overall, I think that this paper is a nice, original contribution to the literature. I have several suggestions that the authors might want to think about. First, it would be good to know how large the sampled patches affected by blowdown were (hectares? Meters?) to get some idea of how large an effect this might be when scaled to the landscape. Second, in future studies, it would be interesting to know how much of this recently

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added soil carbon is actually stabilized. Perhaps the authors could speculate on this.

Minor Comments and Typos

P. 3 line, 15. Change this “broad range of life history strategies requirements” to “broad range of life history strategies”

P. 3 lines 25-30. I am not sure what inferences about adaptation, and hence evolution, you are making here. Is the idea that wind storm disturbance serves as a selective pressure for evolution via natural selection and adaptation? I do not think that it will detract from the main message of the paper to omit this section on adaptive responses of ecosystems to wind storms, and I do think that the current literature on this warrants any strong statements.

P. 5, line 20. Remove the word “extent”

P. 7 Lines 1-13. The order in which you address questions in the section on statistics does not address the order in which you present the questions in the Introduction (i.e. in the Intro, the question on texture came first). I suggest revising these to maintain the same order of questions.

P. 10 Line 25. Change “then” to “that”

Interactive comment on Biogeosciences Discuss., 12, 19351, 2015.

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