

## ***Interactive comment on “Soils of amazonia with particular reference to the rainfor sites” by C. A. Quesada et al.***

### **Anonymous Referee #2**

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In this paper Carlos Quesada and colleagues reviews soils and soil properties of Amazonia. They use soils of the rainfor sites as examples to illustrate soil characteristics of different soil groups. I think the paper is well written and I enjoyed reading it. Although many of the soil descriptions and characteristics discussed in this review have been published before and can be found in the book of Driessen and in the World Reference Base, I think the paper is a valuable contribution for the following reasons. Many ecologists still have the perception that almost all soils in Amazonia are Ferralsols (or Oxisols). This may explain why the issue whether an ecological study is representative is often raised when a study is not done on a Ferralsol, while this is not the case when a study is done on a Ferralsol. The paper makes very clear (again) that the variation in soil groups is huge within Amazonia and hopefully some more ecologists will be con-

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vinced of this. The second reason is that the concept of different soil groups is nicely illustrated with soil chemical and textural data of soil samples which were all sampled and measured using the same methods. I especially enjoyed reading the interpretation of the soil profile data in which the authors showed a profound knowledge of soil forming processes but discuss it in an understandable way also for non soil scientists. The third reason is that the soil chemical and physical data that the authors present show that within one soil group there can be quite a large variation in soil chemical/physical parameter. A concept that is also often hard to understand for ecologists who often expect that a similar soil groups means also similar characteristics.

I have only a few suggestions to make. I think an additional simplified map with the major landforms of Amazonia might have been useful in the introduction. Also a map with the locations of the sites that are discussed in the paper would have been a valuable addition. In the discussion of the Arenosols, I missed that in some cases these are &#8216;mega-podzols&#8217; which have a B horizon that is too deep to key out as a Podzol. Figure 20 shows that the authors are aware of this, but I think it would have been useful to add this in the discussion under 3.5.1. The problem mentioned on page 3858, second paragraph illustrates that the present approach to use the CEC measured at pH = 7 to calculate base saturation, simply does not work for soils with a high variable charge. It would make much more sense to calculate base saturation using ECEC (measured at field pH) because it is simply a better reflection of conditions in the field. That would also reduce the number of profiles in this database that are in the dystric category. I have no other comments, I think this was a nice piece of work.

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