SOIL Discuss., 1, C37–C38, 2014
www.soil-discuss.net/1/C37/2014/

SOIL Discussions Open Access

Interactive comment on "Soil properties and pre-Columbian settlement patterns in the Monumental Mounds Region of the Llanos de Moxos, Bolivian Amazon" *by* U. Lombardo et al.

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Received and published: 21 July 2014

Overall this is an excellent study, with superb methods applied to the research problem. I have three suggestions for clarifying and strengthening the authors' arguments.

1. The observed physical and chemical differences between PR0 and PR1 should be quantified, where possible. The authors suggest that some differences are "significant," but this needs to be demonstrated quantitatively (e.g., t-test/Mann-Whitney, ANOVA/Kruskal-Wallis, etc.). Similarly, correlations are suggested between certain soil/sediment characteristics, but these, too, should be quantified in some way (e.g.,

Pearson's r/Spearman's rho).

2. The authors use relative descriptors, such as "extremely high" and "very low," to characterize some sediment properties. But "high" or "low" compared to what? These are ratio statements that need to be qualified in some way.

3. The authors conclude that the differences between the catenas can be explained by a combination of age, mineralogy, and hydromorphism (pp. 14-15). Later (pp. 16-18), they discuss the consequences of these differences for populations inhabiting the area (namely, that soil conditions established in the late Pleistocene/early Holocene, etc., influenced or determined how populations used the landscape). However, to what extent were human activities in this region a cause (versus consequence) of the observed differences in edaphic characteristics between the catenas? Without chronometric dating of individual horizons or deposits, I am not sure that the authors can conclude that all of the differences between PR0 and PR1 are purely attributable to non-human conditions. Moreover, to what extent have contemporary soil characteristics been impacted by the abandonment of these areas during Spanish occupation? It has been demonstrated elsewhere that highly engineered agroscapes require constant maintenance, and that if such areas are suddenly abandoned, widespread degradation of the resource is possible. To what extent, then, do abandonment processes in this region explain any observed differences between PR0 and PR1? In the end, it would be useful to have a better sense of chronological control in this study so that the reader can better understand what the possibilities are regarding human impacts to the landscape compared to human responses to inherited landforms.

Interactive comment on SOIL Discuss., 1, 81, 2014.