

Interactive comment on “Climate variability and human impact on the environment in South America during the last 2000 years: synthesis and perspectives” by S. G. A. Flantua et al.

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General comments

The paper by Flantua and colleagues represents an impressive review, discussion and evaluation of the potentiality of c. 180 South American pollen records to be included in 2ka- paleoclimate reconstructions, within the framework of Long- Term multi-proxy climate Reconstructions and Dynamics in South America (LOTRED- SA) and PAGES-2k. The records assessment is presented grouping pollen records in seven regions according to current climate modes. Also, current Climate settings is provided in detailed figures (figs. 1-5) that present the six more relevant modes for South America (Table 1)

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and discussed in relation to main precipitation and temperature patterns observed at different regions. Current vegetation patterns and anthropogenic activity indicators are explained at every zone in general terms and provided some extra- information with 5 supplementary information documents.

The manuscript is very well written, the figures illustrate the main aspects that are discussed in the manuscript and they are helpful to show the integration of the individual records results in a wider scale. The "Regional assessments results and discussion" sections represent a huge effort of every author, in the following aspect:

- First, the evaluation of all current published pollen archives of every region, in terms of which of them could be suitable to be included in this review according to 6 criteria detailed in table 2 and Appendix Table 3, pointing periods of climatic trends or anthropogenic influence of each selected pollen record (figs 7-14).

- Second, the synthesis of the more relevant trends of environmental changes at every region, and the analysis of the correspondence or not with climate modes described in figs 1-5. Finally, the Synthesis and conclusions sections present a highly valuable characterization of the strengths and weaknesses of South American pollen records related to their potentiality as archives for climatic reconstruction.

I think this manuscript will be a significant contribution to the Special Issue: “Climate change and human impact in Central and South America over the last 2000 years” of this Journal. I therefore suggest the editor to accept this manuscript for publication.

Specific comments and technical corrections

I detail below some minor comments. I am not an English native speaker, so my grammar suggestions should be taken as a guidance and consulted with a native English speaker. Page 3478, line 18: I think you should use the word archive in plural: “archives” Page 3492, line 21: correct “Ecuadorian” by Ecuatorian Page 3495, line 7: did you mean “suggests that people abandoned” Page 3501, line 9: replace “a” by “an”

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Page 3504, line 6: skip “dominance” after Poaceae Page 3505, line 10: do you mean. . . can elucidate the correct origin. . . I think you should add a verb after “can” Page 3507, line 25: do you mean “conquistadores”? Page 3508, line 2-4: I think you should add a verb to this sentence Fig. 7b. Correct PARAM4-D07 by PATAM4-D07 Fig 9b. Record Urpi Cocha is mentioned between pages 3493-3496, but is missing in Fig9b, why? Fig. 10. Laguna El Cerrito, Laguna Frontera, Laguna San José and Maxus- 1 are not mentioned in the manuscript?. Fig. 12b: Is it possible that Hinojales- San leoncio record colours are inverted? Because the climatic trend showed in the figure is opposite to the exposed between Page 3500, line 26 and Page 3501, line 5.

Regards,

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