

Interactive comment on “Eastern Andean environmental and climate synthesis for the last 2000 years BP from terrestrial pollen and charcoal records of Patagonia” by G. D. Sottile et al.

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Sottile et al For deriving information on past climates the use of specific indicator pollen types present in sediment records goes back almost to the beginning of palynology (e.g. J. Iverson, 1944: *Viscum*, *Hedera* and *Ilex* as climate indicators). In the present paper the authors propose to interpret the last 2k of precipitation changes from 12 pollen records in Patagonia by calculating a “paleohydric balance index” (why not just call it a moisture index?) based on the proportions between forest versus steppe pollen types. The specific pollen types selected to either group are based on data from modern pollen distribution and their relation to large-scale climate patterns, not from an

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ecological understanding of the plant taxa’s habitat preferences. This explains perhaps why the same taxon (e.g. *Misodendrum*, *Cupressaceae* and several herbaceous taxa) in some records are taken to represent indicators for moisture (Mosquito, Rubens, PAB, Frias), whereas in other records they are listed in the category of dry conditions (Pollux, Trebol, etc). The authors need to present their reasoning for the seemingly haphazard choice of taxa. Furthermore, every pollen record, not just those from southern Patagonia, represents local as well as regional signals, with local taxa masking regional taxa. *Escallonia* (listed under the moist group) is a good example for representing a local signal, reflected by highly fluctuating values in the records and thus affecting the proportions of other taxa. This taxon’s proportions are related to bog conditions (or to the coring site’s vicinity to shore in case of lake records), and generally imply drier, not moisture conditions. This might explain perhaps single point “excursions” (such as in Trebol or Mosquito) and the generally large scatter of the data in all records. I think the approach presented is interesting, however, I do not see in the presented curves the latitudinal consistency of the derived climate interpretations. A comparison of the calculated paleohydric values with bog conditions and lake levels during the same interval would have helped to confirm the interpretations. To be able to compare data in the figures with those discussed I suggest 1. To plot the records according to latitude, North to South, and 2. To plot the actual precipitation (moisture) values (mm/year difference from present-day hydric value) that are discussed in the text instead of an index (which is not discussed and fluctuates around 0). Spelling of plant names in the Supplement and grammatical errors throughout the text need to be corrected.

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