

Interactive comment on “Documentary-derived chronologies of rainfall variability in Antigua, Lesser Antilles, 1770–1890” by A. J. Berland et al.

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We would like to express our sincere thanks to the reviewer for his feedback; we are very much encouraged by its positive tone. With regard to the comment on the difficulty of associating a specific dry period in Antigua with ENSO, we would like to clarify a couple of points and suggest some possible rewording.

The reviewer notes:

“it is sometimes difficult to associate specific periods or years of wet/dry conditions to large scales modes of climatic variability such as ENSO or NAO. For example, one particular period—1769–1771 is highlighted as having been a rather low rainfall period, but their connection to ENSO is for the most part inconsistent.” (Page C363).

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The reviewer then provides a link to a paper published in the Journal of Climate, which presents a Peruvian document-based El Niño chronology, as well as the supplementary material that accompanies it (a table listing all events identified). He then highlights the fact that in that chronology no El Niño event was recorded in the period 1769–1771.

We would like to point out that this in fact agrees with what we argue in our manuscript. In the final paragraph of Section 6, we acknowledge that there is no El Niño recorded at that time in the South American chronology of Ortlieb (2000), but simply speculate that concurrent drought in Antigua, Jamaica, Mexico and India could be the mark of El Niño’s global teleconnections. Specifically, we wrote:

“Chenoweth (2003) asserts that low rainfall levels in this record [i.e. Chenoweth’s data for Savannah-la-Mar, Jamaica] for 1768–1771, as well as collocated temperature measurements and concurrent severe drought in Mexico, India and throughout Jamaica is suggestive of a warm ENSO event with global effects. Evidence of rainfall scarcity in Antigua in the rain-years 1769–1771 is consistent with this assertion, though NO EL NIÑO occurrence is documented in South American ENSO chronologies (Ortlieb, 2000).” (Page 1552, lines 16–22; emphasis added).

To avoid any confusion on the part of the reader, we suggest the following possible alterations to the manuscript:

- Cite the El Niño chronology of Garcia-Herrera et al. (2008) as well as that of Ortlieb (2000), both of which highlight the lack of any El Niño events in the years 1769–1771.
- Re-word the section of our manuscript quoted above (Page 1552, lines 16–22), to emphasise: (1) that it was Chenoweth (2003) who originally stated that concurrent drought in Jamaica, Mexico and India at this time could be indicative of an El Niño event; and (2) that although chronologies based on South American documents do not record an El Niño at this time, relatively dry conditions in Antigua certainly do not detract from the aforementioned assertion made by Chenoweth (2003).

References

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