

Interactive comment on “300-years of hydrological records and societal responses to droughts and floods on the Pacific coast of Central America” by Alvaro Guevara-Murua et al.

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Dear David Nash,

We appreciate your generous comments on our manuscript.

Regarding your specific comments:

Major point: You are right to point out that we have not provided a clear indication of our confidence in the record for each year of our reconstruction. We will address this issue in the final version of the manuscript, and include a confidence rating for each year based on Kelso and Vogel (2007).

Minor points:

1. The early period of Spanish-indigenous contact will certainly have had an impact on harvest yields due to conflict, epidemics, and demographic decline (e.g., MacLeod, 2010). In the earliest records we used date to the 1640s; we identified outbreaks of epidemics (flu, typhus, measles, smallpox and cholera) which we expected to be associated with anomalous climatic conditions, but we found no significant relationship between these, shortages and the hydrological index reconstructed in our study. We aim to return to this question in future research. The Actas also record locust plagues, reducing yields in certain years, however the source regions of these plagues are distal and varied and the environmental triggers complex, so we did not include these as an indication of the local climatic situation. Further, these causes of the harvest loss were clearly attributed in the documents.

2. We agree.

3. We agree.

4. We agree – we should have better referenced this statement since it is a well recognised feature of ENSO teleconnections.

MacLeod, M. J.: Spanish Central America: A Socioeconomic History, 1520–1720, University of Texas Press, 2010.

Kelso C., Vogel C.: The climate of Namaqualand in the nineteenth century, *Climatic Change*, 83:357-380, 2007.

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Discussion paper

