

Interactive comment on “A multiproxy database of western North American Holocene paleoclimate records” by Cody C. Routson et al.

Jessie Woodbridge (Referee)

jessie.woodbridge@plymouth.ac.uk

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This paper presents a thorough and valuable amalgamation of palaeoclimate datasets, which have been transformed into a usable format. The detailed metadata included will be highly beneficial for any users of the data and code. This work represents a great example of open science with benefit to the wider scientific community. Specific comments below: Line 64: Are there other reasons that could be mentioned for studying and amalgamating records of Holocene climate? For example, a period with increasing human impacts when modern climate patterns were established and modern coats lines formed, etc. . . Line 94: 2.1 Data collection - “were considered” - This sentence would benefit from addition of “for inclusion in the database”. Line 114: How were the data ‘digitized’? Line 125: How much do site-specific characteristics influence proxy

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relationships with climate? Line 150: Was a minimum number of dates used as criteria for inclusion of records? Line 187: “interpreted in a peer-reviewed publication” – what publication is this and where is this available? Line 239: Were the climate reconstructions performed by the authors or the original analysts? Line 317: Why was 500 year binning selected? How and why were the grid sizes selected? Does changing these factors alter patterns and interpretations? Maybe state here whether age-depth reconstructions are available in the database and how these were developed. Line 329: The statement “help identify future research priorities” would benefit from elaboration. Line 346: When I follow this link: http://lipdverse.org/wNA0_15_0 I receive a message saying “page not found”. Fig 3: How much confidence is there in climate reconstructions when there are very few records for certain time periods? What is the impact on the overall patterns observed of sites appearing/disappearing through the time series depending on the time frame specific records cover? Fig 4: Could numbers and labels be added to the left side y-axis on the lower graph as well?

There is potential for inclusion of extra text and references that could be included in relation to reviewing existing literature and wider discussion around the specific datasets and climatic interpretations (if this is in line with this style of paper). It would also be useful to mention that pollen datasets can be influenced by human land use. While such impacts will be minor in North America for the majority of the Holocene, the impact of people upon vegetation still deserves some acknowledgement, as this can complicate the climate signal in the latter Holocene. For example, see the work of the ArchaeoGlobe group: <https://science.sciencemag.org/content/365/6456/897>

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