Response to comments from Anonymous Referee 1:

Thank you for your positive review of our manuscript. In response to including calibration-curve information for each record: we are focusing our synthesis on what's most useful for reusability, not reiterating all the information contained in the underlying studies. The calibration curve is one of the many choices and variables that go into generating an age model. More important than the calibration curve is the choice of the age-model and the parameters behind it. Even more important is which ages are retained and what material was dated. We chose to invest our time in collecting the primary underlying data for reuse, noting that for most applications, being able to recalibrate or update calibrations is more practical than filtering or aligning records based on original calibrations.

In response to the problems encountered installing the R LiPD Utilities, we appreciate your enthusiasm for vetting the R-package installation. The installation problem you encountered has now been resolved. We have also tested the installation on R version 4.0.3 2020-10-10 and MacOS Catalina. We will update the website installation instructions accordingly. In brief, entering the following commands in R Studio will install the R LiPD utility package.

```
install.packages("remotes")
remotes::install_github("nickmckay/lipd-utilities",subdir = "R")
library(lipdR)
```

Finally, we have also corrected the lipdverse link: http://lipdverse.org/wNAm/0_15_0

Responses to comments from Dr. Jessie Woodbridge:

Thank you for your thorough review of our manuscript. We will address the manuscript flow and clarity points raised as appropriate. These include the specific wording suggestions as well as minor points of clarification as follows.

Line 64: Yes, we will include this example

Line 94: We will modify the sentence as suggested

Line 114: Data were digitized using the MATLAB program digitize2.m from the MATLAB file exchange website: https://www.mathworks.com/matlabcentral/fileexchange/928-digitize2-m. This will be clarified in the manuscript.

Line 125: It is often unclear the extent to which site-specific characteristics can influence proxy relationships with climate. This information is sometimes discussed in the original publications; however, we think that gathering the evidence and evaluating patterns across multiple sites is a useful way to reduce site-specific uncertainties.

Line 150: As stated, the number of dates required are five relatively evenly distributed Holocene dates. Alternatively, a minimum of 3000 years between chronology tie-points is required.

Line 187: “interpreted in a peer-revied publication” refers to the original publications that produced the proxy records, not a previous synthesis product. This point belongs, and is already discussed, in section 2.2. For clarification, we will delete this sentence and focus on metadata.

Line 239: The climate reconstructions were performed by the original analysts except in the case of the midden reconstructions. In these cases, precipitation reconstructions were performed by us on subsets of the midden clusters analyzed by the original authors (Harbert et al., 2018). We used the same midden cluster subsets as the temperature reconstructions developed in Kaufman et al. (2020). We will add text to clarify this and elaborate on the specific method applied.

Line 317: The 500-year bin-size was selected somewhat arbitrarily to help showcase Holocene trends in database. Finer bins show the same long-term patterns with increasing high-frequency variability, because fewer and fewer records contribute to each bin. Grid sizes were selected similarly, to help account for the uneven spatial distribution of records, while following previously published examples.

Line 329: We will elaborate here. Future research priorities for example include focusing new record development in data-sparse regions.

Line 346: We will fix the lipdverse link, which was missing a forward slash between wNAm and 0_15_0. http://lipdverse.org/wNAm/0_15_0. This link will be updated to version 1.0.0 upon the official publication of the database.

Fig 3: These are not reconstructions, rather composites by proxy-type to illustrate the database contents. Confidence in these patterns is low where there are few contributing records. This is reflected in part by the wider 95% error bars on estimates of the mean.

Fig 4: We will move the axes numbering to the left side of the lower panels.

In response to adding extra text and references around specific datasets and interpretations: Our intention with this manuscript is to gather the available evidence. It is beyond the scope of this effort to adequately evaluate the strengths and weaknesses of specific datasets. Similarly, strengths and weaknesses of specific proxy types are equally extensive. Human influence on Holocene pollen datasets is one of many factors influencing specific proxy types. To direct readers to learn more, we will add the text: “Background information including the strengths, weaknesses, and underlying assumptions of the specific poxy types can be found in textbooks devoted to the topic (e.g., Bradley, 2015)”. Nonetheless, we agree that future analysis publications toward evaluating specific dataset relationships with climate and the strengths and weaknesses of different proxy types are warranted.

References:

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Harbert, R. S. and Nixon, K. C.: Quantitative Late Quaternary climate reconstruction from plant macrofossil communities in western North America, Open Quaternary, 4(1), 8, doi:10.5334/oq.46, 2018.

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