Good overall description of a very strong effort. Good product for ESSD. Very interesting graphical database approach.

Several minor concerns:

Line. 9, Abstract: The term “long” as used here seems at best relative but perhaps also misleading. Roughly speaking this manuscript and the VARDA database cover the past 120k years, based entirely on freshwater sediments. The authors cite and apply a time-relevant segment of Greenland ice core data (NGRIP, e.g. Figure 4) but ice core data from e.g Antartica extend at least 800k years. Ocean sediment records, depending on parameter, location, sedimentation rates, etc, can extend easily 10^7 years. Perhaps ‘long’ by freshwater standards but not by paleoclimate standards. Authors need to clarify or adopt a different word/phrase.

Line 61: First reference to Table 1 here. Unlike subsequent tables, which each merit a place-holder in subsequent text, I find no place designation for Table 1. Small error, authors will presumably fix at proof stage.

Line 223 - Confusion about dates and VARDA time coverage. From this sentence a reader might conclude that varved sediment records extend back at least 10^6 years: “maximal age range of 1,208,643 yrs (from 10,475 to 1,219,118 BP) for Lake Malawi (Ivory et al., 2018). “ But Figure 4 ends at roughly 120k years BP. Likewise for the time series tool on the database landing page. A search on Lake Malawi in that VARDA database shows only one entry, ^{14}C data, with a temporal range of 1240 to 10740 yr BP. The citation for that record (L&O 1991) does not match Ivory PNAS 2018 above. I accept the database as a work in progress, but in this case the description implies information not (or not yet) available? As a reviewer and potential user, I lose confidence when confronted by these discrepancies.

VARDA database landing page (which seems substantially out of date?) features PalMod. The PalMod project has stimulated a separate product - focussed on marine sediments for 130k years - recently published in ESSD (https://doi.org/10.5194/essd-12-1053-2020). Other than a single mention in Acknowledgements (line 707), this manuscript makes no mention of PalMod effort or products. No synergies? Compare event horizons or age-depth models? One validates or contradicts the other? Advantages of VARDA (resolution?) relative to PalMod? Potsdam GFZ group doesn’t talk to Bremen MARUM group? This seems a curious omission. Again, fails to build confidence.

Database itself seems useful, somewhat intuitive, but also missing some guidance / functions. Search function did not work (in Google Chrome). Zoom and time-period functions on the time series graphs worked, sometimes in surprising ways. Need some guidance or display management tools? Malawi search (mentioned above) required scroll-down of an alphabetical list or prior knowledge of geographical location. Eventually, both access routes worked.