



EGUsphere, referee comment RC1
<https://doi.org/10.5194/egusphere-2022-844-RC1>, 2022
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Comment on egusphere-2022-844

Anonymous Referee #1

Referee comment on "Paleoecology and evolutionary response of planktonic foraminifera to the mid-Pliocene Warm Period and Plio-Pleistocene bipolar ice sheet expansion" by Adam Woodhouse et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-844-RC1>, 2022

The manuscript by Woodhouse et al. presents planktic foraminiferal count data, species stable isotopic data, and morphometric analyses from the Pliocene of IODP Hole U1338A to assess changes in water structure across the closure of the Central American Seaway. The study is sound, and includes new data that can be incorporated into future paleoceanographic and geochemical studies related to CAS closure and plankton evolutionary responses. The Discussion section may need a bit of re-organization for clarity and flow, but other than that, the paper is well-organized in a logical way. All supplemental figures and files are great. All in-manuscript figures are excellent. I commend the authors on the nice presentation of data and excellent SEM images!

Boscolo-Galazzo et al. 2021 is a two first-author paper; if the editors/journal allow, I suggest changing the reference to Boscolo-Galazzo & Crichton et al. (2021) throughout the manuscript.

Methods section: Include in Section 2.1 or elsewhere in the methods the time interval for which you are conducting the analyses.

Figure 2 – If you can add the species names next to the color key on the figure, instead of in the caption, this would be most helpful to readers. The figure caption reads 'dashed line represents permanent switch to higher proportion of cold-water taxa'; but there are two dashed lines in the figure and neither are labeled a cold-water switch; changing the *Dentoglobigerina* extinction horizon to be a solid line would be helpful and most clear.

Line 183: Not clear what 'relatively even abundances' indicates, rephrase. Unchanging species abundances?

Line 198: Spell out '*Dentoglobigerina*' as it starts a sentence.

Lines 289-290: First mention of the menardellid acme event. Suggest defining what this event is in more detail in the above paragraph (depth and age from which it occurs, if the acme event is defined based on the occurrences of *M. cf. exilis* and *M. cf. pertenuis* only, or all species of menardellids shown in Figure 6). Suggest taking the information in lines 254-255 and including it with more specific information about the acme event, so the information is less disparate.

Lines 266-290, Table 1, Figure 6: The discussion section text surrounding the menardellids should go under its own heading, as a separate sub-section within the Discussion.

Lines 252-265: This text could go under section 4.1, where the discussion focuses on the dentoglobigeriniids.

Discussion: If you take the above advice and move the discussions surrounding dentoglobigeriniids and menardellids to their respective sub-sections, the Discussion could open with a shorter introduction paragraph that gives an overview of the coming sections. This is up to the authors.

Line 472: 'capability' is misspelled