Review on RC1
Adam Woodhouse et al.

Author 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., EGUsphere, https://doi.org/10.5194/egusphere-2022-844-AC1, 2022

Reviewer 1

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!

We thank the reviewer for their kind words and excitement for the manuscript.

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.

This reference has now been changed to Boscolo-Galazzo & Crichton et al. 2021 throughout the text, thank you for pointing that out, I will ensure that I do this in the future, and when reviewing papers in the future that reference this work, that they do the same.

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

This data has now been added to the Methods section, see lines 156/157

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 Dentoglobigerinid extinction horizon to be a solid line would be helpful and most clear.

The in-figure key has now been changed to the species names, and the ecologies are now included within the figure caption. The Dentoglobigerinid extinction
horizon has also now been changed to a solid line to avoid confusion

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

*We have now changed this to “generally consistent species abundances” – see line 196*

Line 198: Spell out ‘Dentoglobigerina’ as it starts a sentence.

*Dentoglobigerina has now been spelt out. See line 212*

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.

*This event has now been better defined on lines 267-269 to clearly layout what the event is showing and where it occurs.*

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.

*This has now been added under a new heading*

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

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.

*We have added this text to the appropriate section, and also reordered the discussion to move from the topic of Dentos, then to Menardellids, as laid out in the Discussion intro. We thank the author for pointing this out, it now is more concise*

Line 472: ‘capability’ is misspelled

*This has now been spelt correctly*