We would like to thank Reviewer 3 for their comments and suggestions that have helped us to clarify our manuscript.

Reviewer #3:

“I was invited as the third reviewer for the revised manuscript. The dataset and topic of this manuscript are both valuable and of broad interest to the paleoceanographic and plankton ecology communities. The authors have addressed the majority of the concerns raised by the initial reviewers in a generally sound manner.

However, the response to Reviewer 1’s comments regarding the influence of environmental variables on foraminiferal fluxes, particularly for *G. bulloides,* remains insufficient (Lines 450-459). While the revised manuscript includes additional statistical explanations, it lacks a deeper exploration of the underlying ecological or biogeochemical mechanisms driving the observed patterns. In its current form, the discussion of *G. bulloides* flux is not only inconclusive but may also be confusing to readers. A more comprehensive interpretation of the potential drivers would substantially strengthen the manuscript and improve clarity. “

We have revised and elaborated through section 4.1 with an aim to further clarify potential drivers of shorter- and longer-term flux (Lines 431-480).

“In addition, while it is understandable that direct comparisons between the 2014–2021 and 1993–1998 periods may be complicated by temporal variability in environmental conditions, the authors should at least briefly acknowledge and discuss the potential implications of these long-term environmental changes for foraminiferal fluxes and assemblage composition.”

We agree that it is important to acknowledge the implications of long-term changes in environmental conditions and foraminiferal flux. We have included additional information about the multi-decadal temperature and carbonate chemistry trends in discussion section 4.1, including a Santa Barbara harbor SST record (Lines 457-460) (Carter et al., 2022) and a carbonate chemistry record from CalCOFI station 90.90, located southwest of SBB (Lines 449-451) (Wolfe et al., 2023), which can hopefully also speak to the previous point raised. In section 4.2, we discuss a decrease in the ratio of inorganic to organic carbon flux and associated strengthening of the biological carbon pump as a key long-term implication of decreasing foraminiferal flux. We have added a summary line to section 4.2 to clarify and highlight this idea (Lines 499-501).

Minor suggestions:

“Please ensure that line thicknesses in all tables are consistent.”

We have edited the line thickness of tables for consistency.

“Check all units throughout the manuscript and figures (e.g., there should be a space between “m^{-2}” and “d^{-1}”).”

The spacing has been edited as suggested throughout the manuscript and figures.

“The subpanels in Figure 10 appear out of sequential order and should be rearranged accordingly.”

The subpanels in Figure 10 have been labeled a, b, and c in sequential order.

References

Carter, M. L., Flick, R. E., Terrill, E., Beckhaus, E. C., Martin, K., Fey, C. L., Walker, P. W., Largier, J. L., McGowan, J.A.: Shore Stations Program, Santa Barbara (Santa Barbara Archive, 2025-03-14). In Shore Stations Program Data Archive: Current and Historical Coastal Ocean Temperature and Salinity Measurements from California Stations, https://doi.org/10.6075/J03N236M, 2022.

Wolfe, W. H., Martz, T. R., Dickson, A. G., Goericke, R., & Ohman, M. D. A 37-year record of ocean acidification in the Southern California current. *Communications Earth & Environment*, *4*(1), 406, https://doi.org/10.1038/s43247-023-01065-0, 2023.