

## **Authors' response**

**We would like to thank the reviewer for the final review. These suggestions have been carefully considered and have helped us improve the manuscript. Below, we provide a detailed response to each comment.**

### **Minor points that were overlooked:**

-In the Results section, the term "intermediate" should be removed from the captions of Figures 3 and 5, where it refers to the three depth layers.

The term "intermediate" has been removed and replaced with "reconstructed".

-The 2.2 section title should be "Sampling strategy" and not "Sample strategy".

The Section 2.2 title has been changed accordingly.

### **Technical notes**

-In Introduction (L48-54), the fourth paragraph should be restructured for better logic. I suggest moving the second sentence (L50-52) to the beginning. This would present the Northwestern Mediterranean Sea (NWMS) before introducing the BioSWOT-Med cruise, creating a more natural flow and a better link to the following paragraph where the cruise is detailed. Also, the acronyms NWMS and Northern Balearic Front (NBF) should be written in full upon first mention here.

This paragraph has been modified as suggested.

-There is inconsistency in the font style for station names, which appear in both italics and regular font throughout the text, figures, and tables. This should be standardized.

The font style for station names is now standardized.

-Zooplankton concentration is reported as "number of individuals m<sup>-3</sup>" on line 124 and in Table 3, but as "ind / m<sup>2</sup>" in Figure 3. The units must be consistent.

The use of different units in Figure 3 and Table 3 is intentional and reflects the different objectives of these representations.

Figure 3 displays zooplankton abundance integrated over depth (individuals m<sup>-2</sup>) for each sampled layer. This choice was made because the vertical layers have different thicknesses (100 m, 100 m, and 200 m). Expressing the data in individuals m<sup>-3</sup> in a stacked bar plot would be misleading, as the height of each segment would then represent density rather than the actual number of individuals contained within each layer, resulting in segments that are not proportional to true abundance.

For these reasons, we consider that using depth-integrated abundance (ind  $m^{-2}$ ) in Figure 3 is the most appropriate and least misleading representation of the data, and we therefore do not modify this figure. Conversion to volumetric concentration (ind  $m^{-3}$ ) is straightforward, as it simply requires dividing the depth-integrated values by the thickness of the corresponding layer (100 m or 200 m).

In contrast, Table 3 reports zooplankton concentration in individuals  $m^{-3}$  to allow direct comparison with previously published data from the DEWEX study, which are expressed in individuals  $m^{-3}$ .

-Figure 3: The number "600000" on the y-axis is out of scale and should be removed. The letters A, B, and F (denoting water masses) should be explained directly in the graph or its caption. Each figure must be self-explanatory.

Figure 3 and its caption have been changed.

-Section 3.4.2: I suggest changing the title from "Comparison of the front community composition with adjacent waters" to "Comparison of the community composition between the front and adjacent waters" for better phrasing.

The 3.4.2 section title is now "Comparison of the community composition between the front and adjacent waters".

-Line 387: The genus names "Pleuromamma and Euchaeta" must be written in italics.

The change has been made.

-Table 4: The title of the third column should be simplified to "Taxa" since different taxonomic levels are listed; "Appendicularia" instead of "Appendicularians"; "Euchaeta" must be in italics; "spp." applies to a genus and should be removed from the family "Corycaeidae".

Table 4 has been modified accordingly.