

# Reviewer Response

E. Willcox & co-authors

## Contents

General	1
Comments main manuscript	1
Comments supplement	3

## General

Again we are grateful for the comments of the reviewer. We have made all recommended changes.

Please find our responses below.

E. Willcox and co-authors.

## Comments main manuscript

- Ln 36. fix spelling benthic-pelagic
  - Done
- Fig 1. “Despite the caption, it would be useful for the reader to see the abbreviations of the water masses either directly on the plot (panel a)), or as part of the figure legend.”
  - The water masses are stacked vertically and therefore it is not possible to add abbreviations in a way that wouldn’t overcrowd the plot. However the sources/currents and gyre (Arctic + TPD, EGC, Atlantic + RAC, GG) are now in the figure legend.
- Ln 116. Comment replacing word “descriptions”: Perhaps starting with “A full description for (...)” would be more appropriate.
  - Done

- Ln 129. revise sentence to avoid duplication: “I would recommend revising here to avoid redundancy (“determining” and “determination”).”
  - Replaced with “We estimate the depth of the mixed layer by estimating the pycnocline from the determination of the maximum Brunt-Väisälä frequency”
- Ln 130. include self citation after ‘our previous study’
  - Done
- Ln 135. Misspelling of ‘meteoric’
  - Done
- Ln 136. Create numbered sections in the supplement and refer to the number in the text of the main manuscript
  - Done
- Figure 3. Change caption to include AOU, add period at end of line.
  - Done
- Ln 170. Add period after ‘etc’
  - Done
- Ln 205. Manuscript: “The first part of the sampling period had warmer surface temperatures on the shelf itself, especially in the south along the coast. This is associated with higher fCO<sub>2</sub>, particularly at higher distances from the Greenland coast and smaller distances to the slope (EGC).” Reviewer: “The plots aimed to substantiate this argument (4a, 4b) do not conclusively show this. In my opinion this would be much better depicted with plots containing maps (in similar style as for Figure 2).”
  - Although we agree that the original statement might be better represented graphically, to give a fair appraisal would likely require the addition of multiple images to show temporal as well as spatial variability and/or almost entirely duplicate Figure 2. This seems like a lot to support a single statement. We have instead amended the text but referred to a new section in the Supplement which includes a map with integrated values with a clear corresponding statement concerning the inadequate temporal representation. We hope this is sufficient.
- Ln 211. Replace ‘with a lot of’; to ‘considerable’
  - Done

## Comments supplement

- Title: The sections of this supplement as well as its figures should be numbered such that they can be cited unequivocally in the main document
  - Done
- Fig 1: Plots are presented in horizontal rather than vertical mode. This should be corrected.
  - Changed caption to a, b
- Fig 1: The figure quality is very low. These plots should be replaced.
  - Done
- Ln 115: Misspelled “description”
  - Done
- Fig 2. Misspelled “meteoric”
  - Done
- Fig 3: change “them” to “them.”
  - Done
- Fig 3: The a-c) labelling on the individual figures is missing.
  - Added labels, edited caption
- Fig 4: The quality of this figure is too low. I advice the authors to exchange it for a new one with appropriate resolution.
  - Increased quality