Dear Editor,

Thank you for your comments and time taken to improve our manuscript. We have modified the manuscript according to the Editor's suggestions. Written below are the Editor's comments followed by our responses (in italics).

Kind regards,
Joanna Pawłowska

Page 4. line 32: None of these references focus on the oceanography upstream of the Barents Sea. Rudels do not mention the NAC, while Loeng mention the Norwegian Atlantic Current (NwAC). Most often the NAC (North Atlantic Current) is used for the North Atlantic, and then it transfers into the NwAC when entering the Nordic Seas. Please add a more relevant reference.

We agree that the name Norwegian Atlantic Current is more appropriate. We have changed the name in the text and in the figure 1. Moreover, the reference to Rudels et al. (2015) has been replaced by Blindheim and Østerhus (2005).

Page 8. Line 31: I am glad you longer say its stable, but I don't really think you can say much about changes either. Maybe the most honest thing will be to be very specific and say something like "The two d18O data points prior to 2.7 cal ka BP record values of 3.55‰ and 3.69‰ vs. VPDB".

This feeds back to comments raised by the reviewers as well, relating to how you cannot really say anything about the time interval prior to 2.7 cal ka based on your data. The change at ca. 2.7 is well known from the Barents Sea, and therefore it makes sense to show that part combined with references to how low sedimentation rates are a common feature for large parts of the western Barents Sea through the mid Holocene. But it does not make sense to make any statements on stability of variability/changes taking place based on those two data points.

Indeed, writing about trends between two data points makes no sense. We have checked the manuscript and removed/modified all the statements referring to variability/stability of proxies before 2.7 cal ka BP.

Page 13, line 14-20 and your response to past page 13, line 9: Yes, several records show a change at ca. 2.7 ka, as you do. Several of these records also show quite some variability within the last ca. 2.7 ka, even if the papers focuses on the longer term trends/conditions (e.g. Groot et al., 2014; Berben et al., 2014; 2017; Risebrobakken et al., 2010). Especially, the studies by Groot and Berben are close to your site, and shows repeated variability e.g. in benthic foraminiferal flux and sea ice through the last 2.7 ka. They may not go in detail with respect to these events, due to a different focus of their work, however, I would still expect a discussion on how your events are related to the overall variability of relevance in your study area, not just the one records that looks most similar. What happens at your site is not independent of what happens at nearby sites.

We have followed the Editor's suggestion and added broader description of environmental changes recorded in the Barents Sea in the mid-late Holocene. The added text is as follows:

The AW inflow to the Barents Sea was relatively stable during the mid-Holocene. The environmental conditions became more unstable in the late Holocene, with periodic cooling of surface waters, a presence of AW and/or chilled AW near the bottom, and more extensive seasonal sea ice cover (Risebrobakken et al., 2010; Berben et al., 2014; Groot et al. 2014). The timing of these changes differed between the study settings: in the western Barents Sea, it was ~ 1.1/1.5 cal ka BP (Berben et al. 2014; Groot et al., 2014), while in the southwestern Barents Sea, the change in environmental conditions was recorded ~ 2.5 cal ka BP (Risebrobakken et al., 2014). In contrast, the northern Barents Sea experienced surface water cooling and more extensive sea-ice cover prior to 2.7 cal ka BP. The increasing influence of AW was observed after 2.7 cal ka BP (Berben et al., 2017).

Figure 5 and 4. Please add dots where you have measurements not only in the abundance plots but also in the flux plots.
The dots have been added to the figures.