

Dear Dr. Yuan Shen,

Thank you very much for your email and for the provisional acceptance of our manuscript, "**Macroalgal influence on particulate organic matter sources and early transformation in an Arctic fjord**" [EGUSPHERE-2026-843]. We greatly appreciate this positive outcome and your guidance throughout the peer-review process.

We have addressed all of your minor editorial and formatting suggestions verbatim to ensure the manuscript meets the highest publication standards. Additionally, we have carefully proofread the entire text to correct minor grammatical errors. We acknowledge that the DOI in the "Assets for review" system section was flagged as restricted. This has been corrected in the submission portal, ensuring that all supplemental assets are now fully unrestricted, active, and accessible without authentication.

Below is our point-by-point response indicating the exact corrections made in the final manuscript.

Line 37: remove comma after "While"

**Response:** Thank you for pointing that out. The comma has been removed.

Line 72: replace "Which," with "These processes"

**Response:** Corrected as suggested.

Line 98: To better resolve the sources and transformation pathways...

**Response:** The text has been modified exactly as requested to enhance the flow of the Introduction.

Line 104-107: No need to italicize the text.

**Response:** The italics have been removed, and the text has been reverted to standard font formatting.

Line 197–199: Statistical analyses were performed using R (version 4.6.0). Prior to analysis of variance (ANOVA), the assumptions of normality and homogeneity of variance were assessed...

**Response:** Thank you for this refinement. Section 2.7 has been updated with this precise phrasing to clearly document our statistical verification workflow.

Line 215: "were" should be "was"

**Response:** Corrected this subject-verb agreement error.

Line 221: ... with no clear trend observed in other photosynthetic pigments

**Response:** The phrasing has been updated accordingly.

Line 237: remove extra space "HN\_ MDS"

**Response:** The typographical error and the extra space have been removed.

Lines 315–316: "also the average individual amino acid concentration were high in MDS than Adj-W". Consider to change to: "The average concentrations of individual amino acids were also higher at MDS than in Adj-W."

**Response:** We have adopted your suggested phrasing verbatim, which significantly improves the clarity of our molecular biomarker data presentation.

We believe the manuscript is now fully polished and ready for production. Thank you once again for your support in bringing this work to publication in *Biogeosciences*.