

Dear Dr. Ventura and colleagues:

Thanks for submitting your paper to Biogeosciences. The topic is of interest to a wide audience, and I have read it with pleasure. However, after your paper has been made available in the Biogeosciences discussion forum, some issues were brought to my attention (see below). These issues need to be resolved, or at the least require your attention before I will contact referees to evaluate your manuscript further.

1. Sections 2.2 and 2.3 of this BG submission are almost 100 % identical to sections 2.3 and 2.5 of the OG paper (Bentley et al, 2021) that has been published. (It appears that through an unfortunate timing the Ithenticate software did not detect this overlap at the time of submission and my preliminary evaluation). The rest of the text has no substantial overlaps.

These two sections have been completely re-written to remove the overlap.

2. The introduction of the paper needs attention: some of the referencing is inaccurate and I recommend articulating clearer the relations with the Bentley et al. paper (in terms of differences in focus, overlap in sampling sites, methods, etc).

The introduction has been heavily revised in content and style. Referencing has been fully reviewed and a number of new citations were added to the revised text. Several sentences have also been added to indicate what the Bentley et al. 2022 paper was focused on and how the BG paper builds on that work.

3. If you use maps that have been published before, this should be clearly communicated to the reader and permission asked if needed (because of copy-right issues). Most scientists slightly modify maps for this reason.

The map figure has been further altered to maximize the print space of the published paper form. The source of prior work to build upon this map have been provided in the figure caption.

4. Clearly communicate to the reader the similarities and differences in samples, sites, methods, etc. between this and your prior paper on lipid biomarkers in the Cathedral Hill hydrothermal vent system.

This has been done in the last paragraph of the introduction (section 1).

Additional changes have been made to the paper:

1. The references section to add new citations and to remove those that no longer fit with the revised text.

2. The introduction has been amended to improve the flow of the discussion surrounding the TEX<sub>86</sub> proxy. All references were checked and updated to ensure they are accurately reflecting the prior work reviewed in the introduction (a through all other parts of the text).
3. Supplemental Table 1 was updated to conform to the data series used in Bentley et al., 2022.
4. Minor edits to the text were made throughout the paper to improve its readability.
5. All the paper's figures have been revised to improve their clarity.

I therefore invite you to upload a revised manuscript in which all issues identified have been solved (and others you might detect while further scrutinizing your paper). I will then consult the referees again to have a look at your revised paper.

With best regards,

Jack Middelburg, handling associate editor Biogeosciences

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