

***Interactive comment on* “Selective preservation of organic matter in marine environments – processes and impact on the fossil record” by K. A. F. Zonneveld et al.**

**K. A. F. Zonneveld et al.**

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Reply to Referee #2, Francine McCarthy

Remarks 1-3 need no reply.

Comments 4-6 and 10 deal with the amount of information and detail provided by the manuscript.

4 – 6. These comments suggest expanding the paper with respect to the methodology and assumptions made that relate to unpublished data. Reply: The paper does not have the intention to be a research paper but rather brings together different dis-

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ciplines and the most recent developments therein. This, to provide a basis for “cross pollination” of approaches and ideas. Discussing methods and assumptions was not our goal. Adding them for the data that are yet still unpublished, would considerably lengthen the manuscript. Our intention to include the most recent developments led sometimes to inclusion of unpublished data. In all but two cases this unpublished material has become published during the period this paper was open for discussion and we updated the new version of our paper accordingly. The exceptions are section 3.3, “Prahl unpubl data” and section 4.2 “Moebius et al. subm” for which the reviewing and publishing could not be finalised yet. Both datasets are established by using standard techniques (e.g. for the alkenones the method published in Prahl et al., 2000, Deep-sea Research II 47, 1581-1604) and can be found in the papers cited in the respective sections. Reproduction of these details would not add value to our paper but would imply a considerable lengthening.

Comments 4-6, 10 concern the length of the paper and the suggestion of cutting back on some of the detail and discussion within the different sections and providing a more succinct summary of these highly diverse methods and case studies.

Doing this would result in a differently structured paper in which case it would be written for a different public. We see no easy way in reducing the length of the paper considerably without making compromises to our goals of presenting the current state of research of individual disciplines in a form that is understandable for scientists working in these different disciplines. There are sufficient textbook papers on the issue that provide the background information about the individual subjects (especially if considering the disciplines separately). There is however a lack of an overview covering the most recent developments in the wide range of (not always communicating) disciplines. In our paper we fill this lack by covering this wide range of disciplines. This needs however, space to introduce each discipline and provide a background to make the ins and outs of a given discipline clear to the readers from other disciplines. We did not aim to write a textbook-like paper (and the workshop was not set up for this) but wanted to

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include recent developments and open questions. This provides an understandable entry in unfamiliar disciplines but requires also detail to make the specific developments clear. The background information given in this way provides the framework for the evaluation of these new developments. Cutting back detail would especially remove the expert information, thus removing also the "experts" interest in the paper.

We contacted the referee, explaining our hesitation in shortening the paper based on the arguments given above and obtained the following reply: "Yes, I do see your point, and I don't expect you to rewrite the paper. I do see the value of the joint approach from so many disciplinary viewpoints, and while I think that there is value in a shorter, "punchier" paper, your longer and more detailed paper has a different target audience. I am happy with supporting publication in its current format".

7, 14. The reviewer acknowledges the intention of the paper: To do justice to a given field of expertise, to avoid bias but also to include important recent (and intrinsically detailed) advances.

Comment 9. We expanded the abstract to outline the major points.

Comment 11 We took advantage of this nice offer and included all the suggestions for improvement on the annotated manuscript. We further improved the text in a large number of other instances. We also included background information and recent developments (papers that came out during the review process) wherever considered appropriate.

The few minor suggestions for improvement also all have been followed.

13. We suggest to increase the size of figs 3, and 11 upon typesetting.

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Interactive comment on Biogeosciences Discuss., 6, 6371, 2009.

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