

Biogeosciences Discuss., referee comment RC1  
<https://doi.org/10.5194/bg-2021-181-RC1>, 2021  
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## Comment on bg-2021-181

Anonymous Referee #1

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Referee comment on "Regional-scale phytoplankton dynamics and their association with glacier meltwater runoff in Svalbard" by Thorben Dunse et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2021-181-RC1>, 2021

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### General comments

This paper describes a study relating glacier meltwater with chlorophyll concentrations around Svalbard. The authors use most (if not all) of the relevant bibliography in a study focused on an important theme in these times of rapid warming of the Arctic regions. Their methods combine coupled atmospheric and glacier runoff modeling and, satellite derived ocean data, which are appropriate methods to the spatial scale of the study. They conclude about a positive association between glacier runoff and chlorophyll concentration in 7 out of 14 hydrological regions within ~10 km from the shore. This conclusion is in line with related studies in Greenland and emphasizes the potential role of glacier runoff in stimulating primary production in adjacent coastal areas and it further contributes to the capacity of the scientific community to foresee the impacts of warming on the Arctic and Antarctic marine ecosystems.

The is an excellent and well written paper about an important topic. Therefore, I believe it should be accepted for publication after a minor revision. I made some suggestions directly on the pdf manuscript file which I attach. Please note that these suggestions should not be seen from my side as a necessary condition for paper acceptance.

Please also note the supplement to this comment:

<https://bg.copernicus.org/preprints/bg-2021-181/bg-2021-181-RC1-supplement.pdf>