**Review Comments to the Author**

**Reviewer #1**: The authors have satisfactorily addressed my concerns. In particular the addition of the new Figure 10 is helpful for putting the results in context.

**Reviewer #2**: I thank the authors for their responses to reviewer comments. They have made clarifications and changes to address my most important concerns about the underlying data and interpretation.

I think the concept behind the new Fig 10 is a great way to sum up and apply the findings. I recognize that this is both inherently speculative and not the primary focus of the authors, but if this is going to be included, the current execution seems superficial. At a minimum, the same map is shown in both A and B - it would greatly help to indicate where the Full Oxygen vs OMZs are. Also, please label the temperate vs tropical tables for clarity.

**Thank you for your comment.**

**As suggested, we have more fully labelled the tables of potential clade niche occupancies.**

**We included the maps as visual references showing current and potential latitudinal clade distributions. Adding current or future OMZ to the maps is beyond our capacity, but it is indeed work for modeling of future niche occupancies.**

**As noted by Reviewer #2, this final figure represents a conceptual and indeed speculative extrapolation of our findings regarding the interactions of photoperiod, light levels and oxygen levels on potential niches for *Prochlorococcus* clades. It is not a global modeling exercise.**

Kind regards,

Mireille Savoie