

We thank the reviewers for their additional comments and help improving our manuscript. Please see our responses in line below.

Referee #1

The manuscript has shown substantial improvement in both structure and fluency compared to the initial version. All suggestions have been duly considered and appropriately addressed. As a final remark, I would recommend revising the concluding sentence of the abstract, which could benefit from reformulation. Overall, the manuscript is suitable for acceptance.

We have revised the concluding sentence of the abstract to now read:

“Altogether, these results suggest that potential models of pigment concentrations via hyperspectral remote sensing may enable improved assessments of global phytoplankton community structure. These assessments may further support the detection of harmful algal blooms and the development of Earth system models.”

Referee #2

The authors have done a detailed revision to address many of the suggestions, feedback, and questions the reviewers had with the earlier version of the manuscript. In the latest version, I only found very minor typos that should be corrected:

Line 184: “HPL method as ...” correct to “HPLC”.

The abbreviation HPL refers to “Horn Point Laboratory” rather than HPLC. It is necessary to use this abbreviation as that is how it is referred to in the cited reference that describes the method in detail (Hooker 2005). We now clarify this by stating: “until analysis at the Horn Point Analytical Services Laboratory (**HPL**) at the University of Maryland with the HPL method as described in Hooker (2005)”

Line 316/317: Remove extra period before the citation: “(Benjamini and Hochberg, 1995).

Line 424: “were elevated wat lower DNA abundances...” correct to “at”.

Line 480 (Figure 3 Legend): “(E) Comparison between Prochloroccus cells...” correct to “Prochlorococcus”

Line 490: “ While HPLC pigments are used validating remote-sensing...” correct to “are used for validating”

We have corrected all of these errors. Thank you.