

This file contains only reviewers' comments not addressed in v1.

Red: editor's comments.

Reviewer: Jesse Wilson

Basic reporting

(...) It may be possible to contextualize what may be happening to the organic matter that is being produced more than what they have done.

Validity of the findings

(...) I think it would have been possible to discuss what they think may be happening to the organic matter that is being produced more than what they have done.

Comments for the author

(...) Additionally, I think the end of the discussion would be improved by the authors mentioning what they think might be happening to the organic matter that is being locally produced. Are there any estimates about the rate of sedimentation in the area? Do they think the currents are taking it elsewhere where it is being respired? Etc.

We thank the reviewer for the comments and the time devoted to revise the manuscript.

We revised the manuscript following reviewer's advice.

The discussion was not significantly modified.

Introduction

Line 66-70: Linking these sentences to the previous paragraph might help to guide the reader a bit. Something along the line of: While this has important implications, virtually all of the above results are from work in highly populated regions of the Northern hemisphere (i.e. Europe, the USA, and Asia) and plankton metabolism may differ in Southern hemisphere waters.

The paragraph was changed in the revised version of the manuscript

While the paragraph was changed, these sentences were not updated. Now l. 64-68. (Again, you don't have to change these sentences, but please address the comment properly).

Line 155-156: This is oddly phrased. I would suggest: "and while the pattern was less clear in Woodman Point, the lowest salinity was also observed in water and early spring." – now lines 163-164

Line 182: This interpretation seems better suited for the discussion. – now line 191.

We followed all the comments and corrected in the revised results section.

The 2 comments above were missed.

Discussion

Line 235-238: There are a lot of commas in this sentence and I can't follow the train of thought. I noticed that high comma use was an issue throughout the paper. While it is grammatically correct in most instances it makes many of the sentences hard to follow. I think it would be possible to reduce the use of commas by restructuring sentences in many cases.

We revised and corrected through the manuscript.

Lines 235-238 (now 245-248) were not modified, please update.

Reviewer: Michael Murrell

Validity of the findings

I think the authors should acknowledge a limitation of their experimental design, given that they only considered processes in surface waters and this limits the scope of the results and interpretation. To address net ecosystem metabolism more holistically, one must grapple with processes occurring throughout the water column and at the sediment water interface, the latter being particularly critical in shallow environments (e.g., Kemp et al. 1992). I encourage the authors to speculate how their interpretations may be tempered by taking into account the likelihood that processes nearer the bottom will become more heterotrophic, due to light limitation. One pattern that I found intriguing was the strong peak in phosphorus in Matilda Bay during summer. Could the authors speculate as to the reason for this? Perhaps sediment P regeneration?

Kemp, W.M., Sampou, P.A., Garber, J., Tuttle, J., Boynton, W.R., 1992. Seasonal depletion of oxygen from bottom waters of Chesapeake Bay: roles of benthic and planktonic respiration and physical exchange processes. Marine Ecology Progress Series 85, 137-152.

We agree that our study could not offer explanations at the level of the whole estuarine ecosystem because we focused on planktonic metabolism. However, waters in Matilda bay are not turbid, allowing the growth of benthic photosynthetic organisms as macroalgae and seagrasses, so we could not identify light limitation of benthic communities as a major explanation for the patterns observed. We believed excess carbon could be exported away the estuary, however, more studies are required to tested.

Please update the text/discussion to reflect this discussion, as other readers will likely have the same concerns/questions. What about the reviewer's question regarding the strong peak in P?

Comments for the author

L116: What does 'micro-Winklers' mean here? (now l. 122 – a reference would be

enough).

L174: Describing statistical relationships between GPP and CR is problematic, because they are not independent ($GPP = NCP + CR$). (now l. 182)