

Biogeosciences Discuss., referee comment RC3 https://doi.org/10.5194/bg-2021-61-RC3, 2021 © Author(s) 2021. This work is distributed under the Creative Commons Attribution 4.0 License.

Comment on bg-2021-61

Anonymous Referee #3

Referee comment on "Will daytime community calcification reflect reef accretion on future, degraded coral reefs?" by Coulson A. Lantz et al., Biogeosciences Discuss., https://doi.org/10.5194/bg-2021-61-RC3, 2021

General comments:

This is a timey study that discusses the possible divergence between estimates of NEC and reef growth in degraded coral reefs. The authors provide an interesting perspective that thermal enhancement of calcification in other benthic members may highly influence NEC, especially in reefs where coral cover is low.

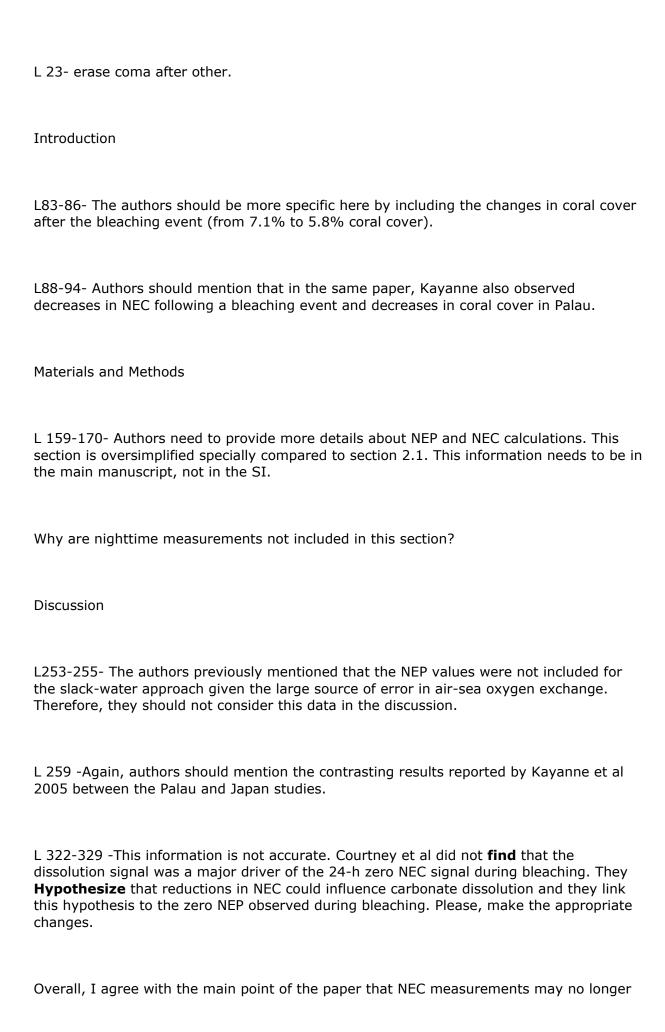
The limited amount of nighttime NEC measurement is a weakness of the study. Nighttime dissolution could significantly influence the 24 hours NEC signal, especially if other benthic groups are contributing substantially to the calcification signal. The authors do a good job discussing this issue in the "future considerations" section. However, the lack of these data could have influenced the conclusions of this study.

There are important information missing in the main text while the SI is too long. Authors could change the structure of the paper by including some sections of the SI (e.g. S2.2.) in the main manuscript.

Overall the paper is well written but there are some references and details missing which are highlighted in the specific comments.

Specific comments

Abstract



be a good proxy for reef growth in degraded coral reefs. However, this is especially true for daytime measurements. During daytime, other benthic groups such as algal turfs, which are becoming more frequent as reefs degrade, can highly influence the metabolic signal of the reef. For example, Romanó de Orte et al. (2021) recently showed that, during daytime, algal turf communities have similar calcification rates than live corals. However, during nighttime, while corals are still net calcifying, algal turfs are net dissolving. This would likely influence NEC during a 24 hours cycle. It is crucial to have robust nighttime NEC measurements in order to access changes in NEC during bleaching events. Further, the algal turf calcification during daytime could also help explain the discrepancies described in L343-364.

L 360 Erase "be"before influence