

Author's response

The authors have done a great job revising their manuscript. The models used are more clear, and methods and analyses better-explained. Additions of relevant literature are also helpful. I have a few minor comments that should be addressed before publication.

Ln 303: suggest removing “dire”
We have removed the word “dire”

Ln 315: I suggest moving the ‘4.1 Method considerations’ section towards the end of the discussion (perhaps before conclusion) so not to front-load the limitations of the study
We agree with the reviewer and have moved this section to the end of the discussion In 424.

Ln 333-335: This sentence should be rephrased to avoid double-negative: “not uncommon” – something like: “Diel shifts between net calc and net diss are typical of coral reefs (Yates and Halley... etc)...”
We rephased this sentence to avoid the double negative. It now reads In 333-335: “*Diel shifts between net calcification and net dissolution are usual for coral reefs and have been recorded on healthier systems than the one studied here.*”

Ln 367: space needed between “by” and “17%”
We added a space In 367

Ln 406: The 4.5 subheading could be clearer. Perhaps flip the text to avoid awkward use of “-“, e.g. “Similar biogeochemical processes by reef communities dominated by corals, sponges and cyanobacteria”
The subheading was changed to “Similar biogeochemical processes by reef communities dominated by corals, sponges and cyanobacteria” In 406.

Ln 413-415: This sentence is circular “...work by Romano found comparable results...were comparable”... and needs rephrasing. E.g. “Recent work by Romano... found comparable results, showing similar daytime calc rates between live and dead coral surfaces”
We made changes accordingly In 413-415 and the sentence now reads: “*Recent work by Romanó de Orte et al. (2021) found comparable results showing similar daytime calcification rates for live coral and dead coral substrate*”

Ln 441: Change “that” to “which”
Changes were made accordingly

Ln 143: “species composition shifts” may be better called “benthic composition shifts” or “community shifts” as the study focus seems more about general benthic cover than species-specific dominance
We agree with the reviewer and have changed the wording to “benthic composition shifts”.

Ln 444: This sentence is quite unclear. What exactly does “remaining corals” mean here? The robust/resilient species that persist habitat degradation? I also caution use of “specialist” to define *Acropora*. They are more often termed ‘fast-growing’ or ‘weedy’ species.
We have altered the sentence In 444 to : “Currently prevalent corals, although more resilient, calcify at a slower pace than previously abundant species (such as *Acropora* spp.) and cannot balance out heterotrophic processes from other functional groups.”

Ln 451: Is this really “surprising” given that the sentences prior state these are “generalist” and “tolerant” corals. It would be expected that tolerant corals are more abundant in areas that have high local stress.
We removed the word surprisingly.

The conclusion should finish with 1-2 strong sentences to push home the findings of this study. Currently, the conclusion focuses on new information on tolerant species from a different paper (de Bakker et al. 2019). Stronger links to findings in this new study are required. The final sentence here essentially says that “even severely degraded reefs can regain functions”, which could be misinterpreted. This study actually found that “Very low or negative NCC rates were recorded on all substrates, suggesting reduced net accretion potential.” Perhaps a final sentence on the importance of protecting reefs to enhance functioning and resilience is needed.

Thank you for this relevant remark, we added these following sentences at the end of the conclusion ln. 452: *“While these sites may provide a spark of hope with regards to recovery potential, most of the reefs in the Caribbean presently reside in ecological states that closely resemble the reef site studied here (or are expected to do so in the near future). Ultimately, Caribbean reefs will benefit most notably from adequate mitigation strategies to give these systems a chance to adapt and restore key functions in the face of exacerbating environmental conditions.”*