

Referee comments to the manuscript

Anomalies in the Carbonate System of Red Sea Coastal Habitats by Kimberlee Baldry, Vincent Saderne, Daniel C. McCorkle, James H. Churchill, Susana Agusti and Carlos M. Duarte

I have read the revised manuscript with interest and my comments now are mostly connected to wordings. My first comment is about being consistent.

Throughout the manuscript, you use both the terms “carbon parameters” and “carbon variables”, please be consistent. I suggest “carbon variables”.

Throughout the manuscript, you use both the terms “carbonate chemistry” and “carbon chemistry”, please be consistent.

Throughout the manuscript, you mix “salinity” and “S”, please be consistent. The same also for “T” and “temperature”.

Regarding depths, please be consistent using space or not when you write a depth/distance in the text, e.g. 50m or 50 m.

Your use two abbreviations for Offshore (“O” and OF”), two for Transition waters (“T” and “TR”), and the same for Coral reefs, Seagrass meadows and Mangrove forest. Please be consistent.

You use both “time series” and “time-series”, please be consistent.

My second comment is on readability. The content is fine, but the text is very heavy to read due to the length of sentences. I advise you to use split most of the long sentences to make the life easier for the reader.

Detailed comments:

P3 L7: is it possible to indicate a distance (m or km?).

P4 L12: change “2015/6” to “2015-2016”.

P4 L13: change “Steiner et al. 2014» to «Steiner et al., 2014».

P4 L14: add «data from» just before «the RV Sea Surveyor».

P4 L22: check unit “s”.

P5 L2: use “w” in the first word and not “W”.

P5 L8: replace “carbon constants” with “K₁” and K₂”, and add information about HSO₄ constant and borate constant.

P5 L12: replace “Residual other” with “Residuals of the other”.

P7 L16: please remove “(n=11)”, since this is mentioned in the following sentence.

P8 L26: please explain the “interaction effect”.

P8 L32: replace “increased” with “increases”

P9 L9: replace “late” with “lake”

P10: there are four time series stations, three coastal and one in the transition zone, right? The title of this chapter is “Coastal Time Series”, so why do you also mention the transition time series? An option could be to change the title to “Time Series”.

P10 L31: add “to the” after “compared”.

P12 L2: replace “end-member” with “water mass”.

P12 L9: replace “variance” with “variability”.

P12 L15: replace “end-member” with “water”.

P12 L14-16: please re-write.

P12 L16: delete one of the “in”'s.

P12 L20: replace “observations of S” with “the salinity observations”.

P13 L2-3: the statement that DIC is only affected by mixing and metabolic processes is only true if your data is sub-surface data, but if your data is from the surface or close to surface, you also have to consider air-sea gas exchange. This brings me to the fact that there is no information about which depths the samples are collected from. Such information is vital, please include

P21 L10: delete "at is".

P22 L7-8: delete "and the transition from offshore to coastal waters".

P25 L4: include the word "which" between "residuals" and "are".

P26 L4: replace "Forsythe, Malcolm and Moler" with "Forsythe et al."

P27 L3: remove the first "and".

Table S1: For Steiner15 data, please write out the years: 2015-2016, and not 2015/6

Table S3: explain numbers in parenthesis

Table S3: intercept S of coral reef 3.667, should be 36.67?

Table S5: Please rewrite the table text