

## RESPONSES TO REVIEWER'S COMMENTS

Manuscript ID: bg-2021-18

Dear Editor,

Thank you for giving us the opportunity to submit a revised draft of the manuscript "*Tolerance of tropical marine microphytobenthos exposed to elevated irradiance and temperature*" for publication. We have incorporated the comments made by the reviewer. Those changes are highlighted within the manuscript. Please see below, in yellow, for a point-by-point response to the reviewer's comments and concerns.

### Comments

#### **Title:**

Title changed: Tolerance of tropical marine microphytobenthos **exposed** to elevated irradiance and temperature

#### **Abstract**

##### **FIRST NOTICE**

LINE 12 Abstract. Shallow tropical marine environments are likely to experience future water temperatures that will challenge the ability of life to survive. Here, the response of a Malaysian (IRRELEVANT) microphytobenthic community to temperature and light was examined.

FUTURE RISE IN WATER TEMPERATURE? HOW FAR INTO THE FUTURE....15 YEARS (NOW)?

THIS PREMISE LACKS SCIENTIFIC OR PHILOSOPHICAL (LOGIC) BASIS

**Response: Statement on climate change/future warning was removed and rephased accordingly. See Line 12 -14 Page 1**

**"Malaysia" removed from the sentence.**

LINE 75 Future warming is likely to cause this temperature to occur more frequently, which will cause a reduction in benthic primary production

TO MUCH CONFIDENCE ON THE GLOBAL HYPERWARMING EXPECTATIONS MAKE THIS CONCLUDINGREMARK OUT OF PLACE (DISCRETE DATA CONTRADICTING ECOLOGICAL PLANETARY EVOLUTION) BESIDES, BY THE TIME SUCH TEMPERATURE RISE WOULD MANIFEST (IF EVER) A REPLACEMENT BY OTHER (PRIMARY PRODUCERS) SPECIES OF THE MFB WOULD HAVE OCCURRED COMPENSATING THE ALEDGED REDUCTION... NATURE WORKS IN SUCH A WAY!

**Response: Statement on climate change/future warming was removed from the text and rephased. See line 76 – 80 Page 3 and Line 378 Page 12**

IN ALL TABLES, SIGNIFICANCE LEVELS (ALPHA VALUES) SHOULD BE REFERED CONSISTENTLY AS 0.05, OR EXPLAIN WHY A HIGHER CONFIDENCE (V.GR.,0.001) WAS SET.

Response: Thank you for the comment. We have made the changes throughout the manuscript.

REPLACE DIATOMS FOR MPB

Response: Thank you for the comment. We have made the changes throughout the manuscript.

Other

Fig. 4: Recovery rate  $s^{-1}$  of  $F_v / F_m$  after the RLC for low irradiance experiments. Recovery rates were plotted against experimental temperatures at irradiances of ( $1800 \mu\text{mol photons m}^{-2} \text{s}^{-1}$  (closed square),  $890 \mu\text{mol photons m}^{-2} \text{s}^{-1}$  (closed circle) and  $0 \text{ photons } \mu\text{m}^{-2} \text{s}^{-1}$  (open triangles)) and temperatures (30, 35, 40, 45, 50, 55 and  $60^\circ\text{C}$ ). In this recovery analysis, samples of  $30^\circ\text{C}$  and  $35^\circ\text{C}$  were analyzed without replicates; thus, no error bar was obtained.

Response: Thank you for pointing the error. Corrections have been made. See Figure 2 Page 24, Figure 3 and 4 Page 25