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

Author(s): Sazlina Salleh and Andrew McMinn

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MS type: Research article

Iteration: Initial Submission

DEAR ANINDA, PLEASE FIND IN THE FOLLOWING MY REITERATIVE CRITIC AND RECOMENDATION ON THE ASIGNED PAPER.

MY OPINION IS THAT: THIS MANUSCRIPT STILL HAS GOOD POTENTIAL IN TERMS OF ECOPHYSIOLOGY AND SHOULD BE EVENTUALLY PUBLISHED. HOWEVER, IT HAS TO BE FURTHER MODIFIED ACCORDING TO THE REITERATED OBSERVATIONS .

TITLE: Response of tropical marine benthic diatoms **exposed** to elevated irradiance and temperature

Title changed as suggested. New Title: Tolerance of tropical marine microphytobenthos to elevated irradiance and temperature

AUTHORS HAVE COMPLIED WITH MOST CORRECTIONS AND SUGGESTIONS INDICATED BY THE OTHER REVIEWER AND I. HOWEVER, IT IS MY APPRECIATION THAT THE FOLLOWING REMARKS HAVE NOT BEEN TAKEN SERIOUSLY, EVEN THOUGH SAID ISSUE CONSTITUTES AN ESSENTIAL BASIS FOR THE SCIENTIFIC SOUNDNESS OF THIS MANUSCRIPT; THEY WERE NOT SUGGESTIONS.

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:

We disagree that references to climate change should be removed from this manuscript. Climate change provides the underlying reason for undertaking this research. Examining the effects of elevated temperatures, such as those predicted to occur this century, is a completely reasonable and legitimate approach. Thank you.

UNQUESTIONED ACCEPTANCE OF A THEORY RENDERS IT QUESTIONABLY UNSCIENTIFIC BUT, INASMUCH THIS IS LINKED TO THE PROBLEM POSED IN INTRODUCTION...SEE BELOW

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 CONCLUDING REMARK 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:

We disagree with the reviewer about the consequences of global warming and intend to leave these sentences in. Thank you.

AS I STATED AT THE START OF THIS REVIEW, THIS IS A MATTER OF UTMOST RELEVANCE. AUTHORS SAY THAT "We disagree that references to climate change should be removed from this manuscript." BUT THEY PROVIDE NO REFERENCES IN THE EDITORIAL SENSE! I.E., BADLY NEEDED CITATIONS. OTHERWISE, THE SOLE BACKGROUND MAY BE TRACED TO THE INITIAL PROPAGANDA DRIVEN STATEMENTS MADE BY MARGARET TATCHER, AL GORE, AND LATER BY LEONARDO DI CAPRIO, WHICH HAVE DUBIOUS AGENDAS, OR THE POLITICAL REPORT BY THE IPCC.SCIENTIFIC PAPERS THAT SOLIDLY SUPPORT THE EXPECTED RISE IN TEMPERATURE, WITHOUT AN HOMEOSTATIC RESPONSE BY THE PLANETARY ECOSYSTEM, SHOULD BE PROVIDED AND, MAINLY, DISCUSSED...

THE STATED DISAGREEMENT BY THE AUTHORS WITHOUT EPISTEMOLOGICAL BASED ARGUMENTS ARE NOT ACCEPTABLE.

I DO NOT INTENT TO UNDERMINE THE VALUE OF THIS STUDY BUT TO UNDERLINE THE RELEVANCE IT MAY HAVE IF THE ABOVE REMARKS ARE DULY CONFRONTED

MINOR OBSERVATIONS

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

REPLACE DIATOMS FOR MPB

Table 3: In-situ photosynthetic parameters of **benthic diatom** at Tanjung Rhu estuary (Site A, B and C) in the surface 10mm (depth ~ 0.2 m at low tide and 1.0 m at high tide). Data are means \pm SD, n = 3.

Table 5 : Two way ANOVA of effects of temperature (0 o C to 60 o C) and irradiance level (1800, 890 and 0 $\mu\text{mol photons m}^{-2} \text{s}^{-1}$) on the photosynthetic parameters (F_v / F_m , maximum quantum yield; α , photosynthetic efficiency; $rETR_{max}$, relative electron transport rate; E_k , photoacclimation index), NPQ (non-photochemical quenching) and recovery rate **the benthic diatom** after exposure to temperatures treatment for 1 hour.

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 photons $\text{m}^{-2} \text{s}^{-1}$ (open triangles)) and temperatures (30, 35, 40, 45, 50, 55 and 60 o C). In this recovery analysis, samples of 30 o C and 35 o C were analyzed without replicates; thus, no error bar was obtained.