Interactive comment on “Physiological response of a golden tide alga (Sargassum muticum) to the interaction of ocean acidification and phosphorus enrichment” by Zhiguang Xu et al.

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The authors grew an invasive Sargassum species under an ecophysiological reason-
able matrix of pCO2 and [phosphate]. They analyzed the growth rate, photosynthetic
rates, nitrate uptake and reduction rates and composition of the algae. They show
interactive effects of pCO2 and [phosphate].

The study is well designed and potentially interesting. The current discussion spends
words on entirely speculative interpretations that might well be true, but which are not
directly supported by the data presented. On the other hand, intriguing ratios and dis-
crepancies in the presented results are not discussed. For example, how can algal
nitrate uptake rates exceed measured nitrate reduction rates? Does the tissue store

NO3- differentially depending upon conditions? Are there variable rates of denitrifica-
tion in the media?

What happens to the environmental effects upon photosynthesis if it is normalized to
chlorophyll rather than freshweight?

I offer some suggestions below for the authors. best regards, Doug Campbell

Abstract: ‘the development of golden tides...’ (not ‘evolvement’)

39.31% etc. over precision. It is not possible to report such values to 1 part per 10,000
but that is what is implied by 39.31%

Introduction: ‘...it originates from Japan...” (not ‘it origins...’)

Discussion Lines 428 to 440 are entirely speculative. They might be true, but there is

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no evidence supporting these specific interpretations, in this paper.