

Interactive
Comment

***Interactive comment on* “Effect of ocean acidification on otolith development in larvae of a tropical marine fish” by P. L. Munday et al.**

Anonymous Referee #2

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Munday and colleague present a very nice set of data on the impact of ocean acidification on otolith of larvae of fish, a neglected taxonomic group and developmental stage. In a very nicely written manuscript, they demonstrate in a well designed and analysed experiment that when reared to near-future pCO₂ levels, larvae develop normal otolith, suggesting some regulation mechanisms at the calcification site. However, some subtle changes were observed when larvae were exposed to more “extreme” pCO₂ levels.

This manuscript deserves publication in Biogeosciences and will make a nice contribution to the field of ocean acidification.

I have some minor comments, questions and suggestions that may improve the manuscript.

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- p2335, I7 & Table 1: some more information on chemistry is needed. For example, what is the level of variability in the measured parameters. - p2335, I11: which anaesthetic was used?

M&M: - Is there any information on survival? - p2336, I8-11: I have some trouble to understand how the 16 randomly individuals relates to breeding pairs. Some more details would be useful. - P2337: relationships between SL and otolith other parameters is very interesting in itself. I would recommend adding these to the manuscript. Are they linear? The size effect is corrected by size but presentation on the results in relation to size would be more interesting (& show regressions).

RESULTS: - Data on impact of pCO₂ on fish growth would also be interesting. - Some pictures of otolith in different pH would be helpful for the reader. - p2341, I7: replace Fig3 by Fig4 - p2341, I15: replace Fig4 by Fig3

DISCUSSION: - It would be nice to have more information on the link between the measured parameters and animal fitness. For example, it is unclear how otolith size and shape evolve with growth and how this relates to function and fitness. Then how this may be influenced (or not) by pCO₂ and if the observed differences could have effect on fitness. - The discussion on life-history is fascinating.

REFERENCE: - The references are not always in alphabetic order.

Interactive comment on Biogeosciences Discuss., 8, 2329, 2011.

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