Reviewer: 1  
  
Comments to the Author  
This paper opens an interesting perspective on how changes in environmental oxygen conditions can shape the success of invasive species.  The authors use a simplified approach successfully to show how hypoxia sensitivity comes into play. ed. The smaller scale findings in this study relating to variabilities in ambient oxygen are very interesting. This also has wider implications, e.g. in large scale biogeography (cf. Deutsch et al. Science 2015) or oxygen dependent species distributions in large scale hypoxia areas (Storch et al, 2014 in Global Change Biology). Some widening of the literature base seems justified. In this context the terms “invasive” and “native” need to be clearly defined, e.g. invasive from where, is this only a redistribution of endemic communities or are wide ranging expansions of species ranges involved? Also the metabolic background (oxyconformers vs. regulators) needs to be detailed more (see below).  
  
1- The paper has jargon in it that should at least be explained, e.g. “lowest R\* value, sensu Tilman 2004“ is not an upfront explanation that makes the paper readable to the non-expert. An explanation such as in l. 376 should be moved up.

*R: The paragraph was edited, more information about R\* was inserted. Lines xxx*

2- 123: The original literature to show that critical PO2 indicates the onset of anaerobic metabolism is in fact referred to and used to elaborate wider principles by Portner and Grieshaber 1993. There are different metabolic types, not all organisms are oxyregulators and differentiating between oxyconformity and oxyregulation may have implications for the approach used in this study. This should clearly be addressed in the discussion based on literature largely produced in the Grieshaber lab in the 80ies and 90ies.

*R: I think that way of how this was introduced in the discussion was confusing, so that part was edited, lines xxxx. I don’t want to give more deep explanations about this issue because goes beyond the aims of our research and may be more confusing for the readers. However, some sentences were inserted in the discussion and in the text we suggested two papers to read. Lines xxxx*

3- 159: The shortcomings of closed-system respirometry need to be kept in mind.  
*R: Some sentences were inserted In the M&M section. Lines xxxx*

4- 164: I do not think Presens is based in Aachen.

*R: That is right, is Regensburg. Changed in the text, line xxx*  
5- 187 to 191: not clear how this manipulation relates to physiological reality?

FOR DIEGO  
  
6- 216: clearly a discussion is needed as how this assumption is potentially wrong, i.e. the uncertainty involved as the transition to anaerobic metabolism has not been tested.

*R: We agree. A paragraph in the discussion was edited to talk about this point. Lines xxx*7- 262: Here an assessment of the true rate of oxygen consumption in relation to tolerance would also appear extremely useful.  
FOR DIEGO

8- 289: the terms in invasive and native need to be clearly defined, e.g. invasive from where, is this only a redistribution of endemic communities?  
*R: Species that are invasive and natives to Australia. A short definition inserted in the final paragraph of the introduction. Lines xxx and xxx.*

9- 300: size distributions could be mentioned within each sub-graph as well as morphotypes  
*R: The body size was inserted in the table 1. Also, the order of the species in the table 1 and the figure 1 was changed, to make easier the visual inspection of the figure according to the morpothype and invasive/ native status.*