

Interactive comment on “Impacts of hypoxia on the structure and processes in the pelagic community (zooplankton, macro-invertebrates and fish)” by W. Ekau et al.

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Title: “Impacts of hypoxia on the structure and processes in the pelagic community (zooplankton, macro-invertebrates and fish)” Author(s): W. Ekau et al. MS No.: bg-2009-94 Special Issue: Hypoxia

Review Comments The above mentioned manuscript provides with an extensive review on the knowledge of coastal hypoxia and its influence on the pelagic community, from gelatinous planktonic species to fish. The examination of the impact from hypoxia covers a wide and in depth analysis of existing data in terms of composition,
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physiology, behavior and ecology. Then the manuscript compares the forcing and response relationship between different physical conditions and geographic settings, like the Baltic Sea and Benguela Upwelling System, although the discussion on these two examples has to be balanced in terms of research activities and data interpretations. The case studies in this work are good examples that can be followed by research activities in other regions to understand the function of pelagic ecosystems and link to the hypoxia that is regulated by climate variability and anthropogenic perturbations in addition. Overall, the illustrations are comprehensive and the structure of this manuscript is well focused, although syntax has to be checked again and lengthy sections need to more condense in revision.

Specific comments 1. Page 5075 and lines 12-17, macro-scale and micro-scale need to be defined and kept consistent in the text. 2. Page 5083, the section 3: “Reaction of different taxonomic groups to hypoxic conditions in the pelagic system”, is a little bit rumbling and can be reorganized in terms of either food-web structure or behavior – habitat relationship. 3. Page 5088, although the major topic of this manuscript is on the pelagic, benthic species are mentioned in terms of tolerance of low oxygen, which needs to be compared with pelagic counterparts. Otherwise, discussion needs to be focused on the pelagic species. 4. Page 5107 and “Case studies”, there is a need to have map of circulation for each of case studies (i.e. Baltic Sea and Benguela Upwelling), readers may not be familiar with the study areas. 5. Page 5114 and Lines 9-27, Discussions on other systems like Humboldt and California need to be compared to the case studies (e.g. Benguela Upwelling). Similar discussion was made for Gulf of Mexico in Page 5113, which is not well organized and compared to Baltic Sea? 6. Page 5116 and last paragraph, there is another mechanism like “fishing down the food-web” that can cause similar phenomenon. 7. Page 5117 and lines 20-24, the economic consequences of hypoxia was mentioned, but the discussion does not induce a conclusion. In fact the economic consequence is a very good topic and relevant to this study, hence more effort needs to be put on this in revision. 8. Figure 1, the illustration is lengthy but not understandable. Some work needs to be done to make

the figure simple and comprehensive. 9. Figure 2, the figure looks very heavy and symbols need to be explained in more details, so that the reader can follow. 10. Figure 3, Y-axis needs to be explained. 11. Figure 4, the quality of the color figure needs to be improved to make sharp contrast and to be attractive. 12. Figure 5, illustration of this figure needs to be more informative, with interpretation of X-axis. 13. Figure 7, Quality of the color figure needs to be improved with big fonts.

In conclusion, it is recommended that the manuscript be accepted for publication after moderate revision.

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