

Interactive comment on “Biogeography of key mesozooplankton species in the North Atlantic, by manual counting methods, and egg production of *Calanus finmarchicus*” by W. Melle et al.

Anonymous Referee #2

Received and published: 20 February 2015

General comments:

This paper reports efforts on compilation of large datasets on key zooplankton taxa in the North Atlantic with aims to build the foundation for ongoing and future research on the influence of habitat change, including climate forcing, on the distribution and abundance of the species. As we know compiling large datasets with various sources across broad geographic regions over years is a challenge mainly due to the methodological differences on data collection that can be an issue for further study of biogeography of the species and spatial variations in abundance and distribution in response to climate forcing. Overall, this study is important potentially with broad impacts and can be a

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useful contribution to the field. However, there are a couple of things that were a little too briefly presented in this paper except for the description on egg production of *C. finmarchicus*. The paper seems like a data manual, rather than a research article and simply concentrates on data compilation with little effort to help readers make sense of the data and the relevance. I feel that detailed description on pros and cons on methodologies in data collection will improve the manuscript, for instance, how representative could be for the abundance data sampled by CPR for *C. finmarchicus*? given the strong seasonal patterns and doing diapause of the species, the potential implications of this study and cautions suggested to the readers to take when applying the data. Not sure if the word file of the paper I reviewed is complete or not, because there is no discussion. Additionally the paper seems not well organized and jumped from 2. Materials and Methods (Line 66) to 4. Acknowledgment (Line 231).

Specifics:

Abstract: Line 35, why “possible”? *C. finmarchius* is almost for sure the most important copepod in north Atlantic. Line 38, there is very little information presented on demography compared to egg production in the manuscript. The potential implications of the study to the field should be highlighted in introduction. Actually the authors stated the objectives in line 62-64.

Introduction: It is a very brief introduction. The manuscript could be benefited with a relatively complete literature review to highlight the importance of the key zooplankton taxa in the north Atlantic.

Materials and methods: Line 75, Unit of Temperature should be (°C), not 0C? Line 77, I didn't see something about Temperature and Chl-a indicated in figure captions. Line 89-90, only late developmental stages of couple *Calanus* species were caught using CRP. Is it a general pattern across entire north Atlantic? or seasonal, and regional, and which region and season? , It's not clear how CRP (only sampling 6 m depth) can catch CVI of *C. finmarchicus*, since the species conduct annual diapause in deep

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water at late stage. Line 104-110, this paragraph can be little bit detailed since the seasonal patterns of demography of the species is highly valuable to achieve the stated objectives of the study. Line 113-230, this section is well written and very detailed on egg production and female size. Other sections could be written like this one. Line 125, a full name should be given before PANGEA. Line 184-188, as the authors said, methodological differences can be a problem for further comparison of the data.

Figures: Both figures were not made in high resolutions.

Interactive comment on Earth Syst. Sci. Data Discuss., 7, 225, 2014.

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