

Interactive comment on “Distribution of known macrozooplankton abundance and biomass in the global ocean” by R. Moriarty et al.

Anonymous Referee #3

Received and published: 5 October 2012

Our main objection to this MS is that the author excludes copepods, especially *Calanus* copepods from this paper. The comparison between Arctic (*Calanus* copepod dominated) and Antarctic (krill dominated) is therefore not representative, either as an expression of macrozooplankton biomass or abundance.

The authors have compiled and analysed an impressive amount of data. The manuscript does however not offer much of a discussion or interpretation of the observed results but is more a presentation the available data in the selected databases. We are a bit skeptical what can actually be achieved with this kind of analysis. What does a global estimate of biomass and abundance really tell us, especially since it is based on data analyses that exclude the most important macrozooplanktonic groups in the Arctic the *Calanus* copepods, and is based on samples from different seasons

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and with different methods? The strongest part of the analysis is probably the global overview over where the (non *Calanus*) macrozooplankton abundance and biomass are registered and where there are gaps (spatial and temporal) in the datasets. Data analysed in this MS from the Arctic are scares, and there are probably more data available. Are the data assembled by Russ Hopcroft included in this analyses?

Specific comments:

- There appears to be large variability in the data set concerning depth distribution and I wonder why the authors didn't focus on the upper 200-300 m as most data seems to originate from here.
- Also with regard to the variability in sample depth: If abundance data at one station was vertical resolved how was that data treated for the general analysis (Figure 2 and 3): were abundance/biomass data averaged over depth or abundance/biomass from each single depth included in analysis?
- Concerning the definition of macrozooplankton: The authors state that they define zooplankton with adult > 2mm as macrozooplankton? Why were copepods species that are >2 mm not included in the analysis (see comments above)?
- Page 9, first paragraph: if the outliers are most likely real values why where they removed?
- Page 10, line 6-8: "where the southern hemisphere has fewer observations peaking at 30 N": I don't understand what the authors trying to say here? Do they mean 30 S? Please rephrase
- Table 1b: The "y" at the end of Germany is missing several times in the table
- Table 2: *Clione limacina* (not limacine)
- Figure 2c and 3c: Both figures show log transformed abundance or biomass against latitude. In how far does that indicate "latitudinal depth distribution" as stated in the figure

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text?

Interactive comment on Earth Syst. Sci. Data Discuss., 5, 187, 2012.

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