

Interactive comment on “Turnover diversity drives large-scale biodiversity patterns in bathyal sediments of the Mediterranean Sea” by S. Bianchelli et al.

Anonymous Referee #1

Received and published: 29 January 2013

General comments

This paper is on the turnover of nematode species composition along a west-east gradient in the Mediterranean. It is a well written paper which includes some interesting (although not novel) aspects on regional diversity of nematodes in relation to habitat heterogeneity.

Specific comments

The main problem I have with the paper is the statement that turn-over diversity drives large scale patterns in biodiversity (with other words the regional diversity). This sounds like ‘kicking in on an open door’. What else than turnover diversity drives re-

C7789

gional diversity? However the results on page 12 line 7 suggest that both alpha and beta diversity explain similar amounts of the regional diversity (28 and 32% respectively) which again seems like obvious since regional diversity is calculated based on alpha and beta. What is maybe most remarkable is that they do not explain more than only 60% together since regional diversity is calculated based on them. Also is the paper sometimes difficult to follow since the terms habitats, sites and areas are not clearly defined.

Technical comments

Therefore in the first place the title needs to be revised . It seems like obvious that turnover drives large scale biodiversity patterns. In addition I would specify the taxonomic group in the title too Page 2 line 9 The depth varies between 600 and 1200 m so it actually doubles. Stating it is fixed is therefore not correct Page 3 line 6 Remove “or they can arise from a single component”. The nomenclature can be more consistent (sampling areas, sites, habitats used for the same or not??This is often very confusing) Pag 5 habitat heterogeneity is not equally represented over all three regions. Is that taken into account when comparing regional diversity? explain Page 5 line 26: there is some contradiction between the two deployments per site indicated in this line , while two lines further three cores from independent deployments are indicated Page 6 line 9 What is meant by previously here? Explain Line 14 replace passed by sieved Line 25 since replicates are pooled the small scale turnover between replicates is not considered while these small scale patchiness also may be important Page 7 Line 26 remove the line on Moens et al since not relevant here. Page 8 line 10. Bongers modified the CP score of the monhysterids in a latter paper. Is this correction taking into account? Page 9 line 3 There is no indication if assumptions for ANOVA were fulfilled. Page 9 line 7 And how were differences between sites (habitats) investigated if replicates were pooled?? (also on page 10 line 7 sites are compared but there are no replicates?) Page 10 from line 5; the degrees of freedom are not provided so it is difficult to see what is exactly compared, also because in material and methods it was mentioned

C7790

that replicates were pooled? Page 11 line 5 The saturation pattern is a methodological artifact and explained by the fact that only 200 nematodes were identified in these samples. You can not calculate an ES for a number of individuals higher than the one you have actually identified . Page 12 from line 5 . Regional diversity is calculated based on alpha and beta diversity so it is obvious that you will find a strong correlation. Page 12 line 21-24. This sentence is not clear. what is meant here? Page 13 line 28. The eight fold increase is not seen from fig 2 Page 14 from line 5 (see my earlier comment on rarefaction curves) Page 14 line 23 when you have a low number of nematodes with many rare taxa it is obvious you get a high turnover Page 16 line 1 to 10. The east has less predators but higher maturity index while predators in general have high CP scores. This seems like contradictory? Page 16 from line 15; It is not clear if the exclusive species per habitat are also the dominant ones or rather rare taxa, while this is relevant information. Can you provide this information.

Interactive comment on Biogeosciences Discuss., 9, 17819, 2012.

C7791