Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2017-116-AC2, 2017

Biogeosciences Discussions

Interactive comment on "Effects of temperature on the composition and diversity of bacterial communities in bamboo soils at different elevations" *by* Yu-Te Lin et al.

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Received and published: 25 July 2017

General comments

Page 4, Line 23: The objectives include determining the response of individual phylogenetic groups to temperature shifts, but there is not data that quantifies phylogenetic groups specifically. The issue with relative abundance is that when abundance of one group increases it could be due to an increase or a decrease in another group. This objective should be revised.

Response: The objective has been revised to "changes in the abundances of different

phylogenetic groups at different incubation temperatures" (p. 4, lines 22-23).

Likewise, the text that discusses Figure 3 and 4 should be qualified to reflect this limitation of abundance data alone. It would greatly strengthen the study if some measure of biomass was taken so that we would at least know how the total population changed during the incubation.

Response: We have clarified that our analyses were based strictly on abundance data in p. 11, lines 10-11, and 16. Unfortunately, we did not have data on biomass during incubation.

Although the introduction and title elude to the fact that the soils being studied were under bamboo, there is no mention of bamboo in the discussion. The title is therefore misleading, as there is no emphasis at all on the plants or on the management of the system. The discussion should be rewritten to include more discussion associated with bamboo and management or the title should be changed.

Response: A paragraph on bamboo and related management practices has been added in the discussion in p. 11, lines 18-22.

Specific comments

Comment: Page 3, Line 14: I do not know what "a.s.l." is?

Response: We have defined the abbreviation, which means: above sea level (p. 3, lines 13-14).

Comment: Page 3, Line 17-21: The organization of this section needs to be improved. There seems to a sharp juxtaposition from discussing management of bamboo, to discussing abandoned bamboo plots. A strong justification should also be expressed for characterizing microbial communities.

Response: This section has been rewritten based on the reviewer's suggestion (p. 3, lines 17-20).

Comment: Page 3, Line 24: It isn't clear what a "humpback trend" means in terms of diversity

Response: It means that the bacterial diversity was less diverse at low and high elevation, with maximum diversity at middle elevations. This is now clearly explained in the text (p. 3, lines 24-25).

Comment: Page 3, Line 26: It isn't clear what the authors are referring to when they say increase "humification"

Response: Our study showed that the bamboo invasion could accelerate the degradation of soil organic matter. We have clarified "invasion of bamboo into adjacent forest soils" in p. 3, line 26 and p. 4, line 1.

Comment: Page 12, Line 8-12: There is a lot of challenges in the literature to the copitroph/oligotrophy paradigm. I think there needs to be more literature added to this section. There are also some warming studies that should be referenced here.

Response: We have elaborated the discussion on copitroph/oligotrophy and warming studies (p. 13, lines 2-3, 5, and 7-8).

Comment: Figure 3: There are no error bars on Figure 3, therefore it is difficult to understand what are significant differences.

Response: Error bars have been added in Figure 3.

Comment: Page 12, Line 16: It seems like an oversimplification to suggest that the phylum acidobacteria, which has been shown to have a great deal of variation could be used as a climate warming marker. More justification and references should be included to support this statement or it should be removed.

Response: This sentence has been deleted.

Technical corrections

Comment: Page 11, Line 16: There appears to be a reference missing for the Oklahoma study.

Response: The missing reference has been added in p. 12, line 6.

Please also note the supplement to this comment:
https://www.biogeosciences-discuss.net/bg-2017-116/bg-2017-116-AC2-supplement.pdf

Interactive comment on Biogeosciences Discuss., https://doi.org/10.5194/bg-2017-116, 2017.