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Comment

## ***Interactive comment on “Understanding soil erosion impacts in temperate agroecosystems: bridging the gap between geomorphology and soil ecology” by C. Baxter et al.***

**C. Baxter et al.**

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We are delighted that the reviewer agrees with us that this research area is under researched and thus is currently an important knowledge gap that requires addressing. We therefore thank the reviewer for their time in providing us with very constructive comments, which has helped us to improve the manuscript. To varying degrees we have taken on board all the comments from the reviewer and modified the manuscript accordingly (a revised version of the manuscript is currently with the handling editor). Below, we outline the changes made to the manuscript. The reviewer suggests the inclusion of an additional figure to highlight the connection between soil biota and the

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soil surface. We believe that modifying the existing Figure 2 (now Figure 1 in the modified manuscript) by the inclusion of text describing the relationship at various scales in the context of erosion addresses the point raised by the reviewer. We note the comment by the reviewer regarding the distinction of direct and indirect effects of erosion on soil biota. We agree that this distinction is important but is on the periphery of this manuscript which is focussed on the consequences of redistribution and egress of soil biota from the system. The losses of these indirect inter-relationships should not be underestimated and would form part of future research in this area. However, we agree with the reviewer that we were remiss not to make mention of this and have modified the manuscript accordingly with the inclusion of new text (see page 2, lines 39- 42: file with handling editor). The reviewer suggests that the case for using nematodes as a model organism is not fully made. On reflection, this is a valid observation and accordingly we have modified the text to provide justification why we believe nematodes are a good choice as a model organism. For studies of this nature taxa that operate and can be redistributed by all scales of (rainfall) erosion from droplet rainsplash to extreme rainfall events is key. Whilst we fully acknowledge the importance of earthworms to the soil system, co-authors BMM and RN have published extensively on earthworms, in this particular context they are not the optimal choice. To facilitate a better case of support for using nematodes as a model organism, the reviewer has suggested a reorganisation and restructuring of the manuscript and has suggested moving text regarding nematodes to earlier in the manuscript to ensure a logical progression for the reader. To that end, we have moved what was the first part of section 5 to become new section 1.2 and have moved sections 5.1 and 5.2 to become new sections 4 and 4.1. We believe that this improves the logical flow of the manuscript. The reviewer suggests that the section 'Soil erosion and climate change' makes detailed elaboration of the theme of soil resilience, and that this is beyond the scope of the review. On reflection, we agree with the reviewer, thank them for this helpful observation, and have omitted this section from the revised manuscript. We also thank the reviewer for suggesting that the abstract should be better focused to direct the reader; that the manuscript title

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should include nematodes, and that chapter headings should be checked to ensure the term biota is appropriate to describe the chapter. We have modified the manuscript accordingly to encompass all these points.

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Interactive comment on Biogeosciences Discuss., 10, 7491, 2013.

**BGD**

10, C3492–C3494, 2013

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