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3, S2012–S2013, 2007

Interactive
Comment

Interactive comment on “Eco-geomorphology and vegetation patterns in arid and semi-arid regions” by P. M. Saco et al.

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This paper is a significant contribution to the now well-populated literature surrounding banded landscapes, which has appeared over the last 10 years. New, rigorous equations have been put forward to explain the nature of spatial redistribution. The authors have concentrated on dealing mainly with the physical processes of run-off/run-on and sediment transport and in looking again at the issue of whether vegetation bands move upslope over time as so frequently predicted in the past from simple field observations, but not experimentally observed. This has not been resolved here, and perhaps future work will look in more detail at specific weather sequences or events which might

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trigger such a movement. The reviewer has made observations over a 17-year period and not been able to detect even the smallest upslope movement in sedimentation patterns or in vegetation colonisation. So, the questions now revolve around: is upslope movement very slow, or episodic. If the latter, what threshold weather and landscape conditions are needed for this to occur?

This Ms possible heralds a new thrust into this area, and the role of soil fauna in creating and maintaining macro-porosity synergistically with vascular plants will need to be an integral part of the study. In western NSW, three-phase mosaics are common, and it is not yet clear if these need a different mode of functional analysis or are just a variant of the two-phase systems. New work By D Bowman, (possibly not yet published) looking at the residence time of sediments in vegetation bands will need to be carefully taken into consideration in new work.

Although this material may seem academic, the conceptual frameworks concerning landscape function spinning off the examination of vegetation bands will continue to inform improved management of arid and semi-arid lands.

An omission from the references is Noy-Meir, I. 1981. Spatial effects in modelling of arid ecosystems. In: Arid Land Ecosystems, eds DW Goodall and RA Perry, pp411-432. Cambridge, Cambridge University Press.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 2559, 2006.

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