Earth Surf. Dynam. Discuss., 1, C111–C112, 2013
www.earth-surf-dynam-discuss.net/1/C111/2013/

Earth Surface Dynamics Discussions

Interactive comment on "The role of hydrological transience in peatland pattern formation" *by* P. J. Morris et al.

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Received and published: 20 August 2013

We are grateful to Anonymous Referee #2 (henceforth AR2) for their comments on the manuscript, and we are encouraged by the positive remarks in their first paragraph (page C94). We have only two short remarks in response.

Firstly, in the second paragraph of the review (pages C94-95), AR2 states that our results are not very different from those of the previous SGCJ studies. We would remind readers and the editors that, to the contrary, our numerical experiments showed new behaviours not previously seen in the ponding model. In particular, the finding that patterning did not occur under the most stringent hydrological steady-state criteria is an entirely novel finding that was central to much of our subsequent analysis and discussion.

Secondly, in the third paragraph of the review (C95), AR2 suggests that we should explore the hydrological and/or ecological meaning of the short equilibration times required to generate realistic patterning. We are somewhat confused by this request because we feel that we have dealt with this issue in detail. Indeed, we used the models' reliance on short equilibration times to justify our hypothesis about ecological memory in peatlands (see the discussion article, P47 L3 to P48 L25; and P52 L11 to L21). In the interests of avoiding over-interpretation we are disinclined to speculate further on the meaning of the short equilibration times; rather, we leave this as an objective for future studies.

Interactive comment on Earth Surf. Dynam. Discuss., 1, 31, 2013.