

## ***Interactive comment on “The fate of seeds in the soil: a review of the influence of overland flow on seed removal and its consequences for the vegetation of arid and semiarid patchy ecosystems” by E. Bochet***

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### General comments

This paper is an excellent review of the state of the art in relation to seed fate in overland flowing arid and semiarid lands and its role in vegetation composition and structure. It also proposes very original ideas for future research, which are quite stimulating. The paper is well written and organized. The reference list is very complete and update. For all this reasons I fully recommend its publication in this journal. However,

C159

I have detected a few aspects that need some attention.

### Specific comments

Pag 590, Lines 25-28, and page591, lines 7-11 I think that there is confusion here between seed dormancy and seed persistence in the soil. I recommend reading the paper by Thompson and Ooi 2010. To germinate or not germinate: more than just a question of dormancy. Seed Science Research 20:209-2011, for this discussion. Not all seeds that form a persistent seed bank are dormant. Dormancy is a property of the seed but persistence can be a property of the environment. A non-dormant seed that is buried might or might not germinate depending on its germination requirements (e. g. Light or darkness). If it does not germinate, it can be part of the persistent fraction, if it germinates at a sufficient depth, it can die because the seedling does not reach the soil surface. This also happens with dormant seeds when they release dormancy. Maybe you can develop a little bit more the aspects related with the fate of seeds when they are buried, which is other aspect of the problem, in the section 3.1. I suggest to read other related papers such as Traba et al 2004 Seed Science Research, and Rivera et al (2012) Ecological engineering.

### Minor comments

Pg 586, Line 12, and pg 589, line 27: in your first goal, you do not put “..special attention to seed density...”, but “special attention to processes that affect seed density...”. pg 595, line 12 delete “slope or” it is a bit confusing and not necessary. Line 14: it is not clear what you want to say with “seed losses...decreased... with total transport length”. Figure 2 because of the small size of the figure, the different lines are indistinguishable Fig 5 is very difficult to read. Also, I would delete part A of the graph. The label “Low competitive” or “High competitive” to refer to the plants in the steep slope of on the button flat areas is very controversial (Steep slope plants can be very competitive for water but plants on the flat area can be more competitive for light). I also think that this concept is not necessary for your discourse (you do not mention

C160

competitiveness in the entire text related to this figure).

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Interactive comment on SOIL Discuss., 1, 585, 2014.

C161