

## ***Interactive comment on “Ecohydrological effectiveness of litter crusts in sandy ecosystem” by Yu Liu et al.***

**Anonymous Referee #2**

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Overall assessment – It would seem as though the methods used are sound as are the results obtained and the conclusions obtained from those results. However, the manuscript does require an English language edit. Some of the sentences are not comprehensible and as such it is very difficult to understand key aspects of this manuscript. I found it very difficult to understand what the authors meant but litter crusts as it is defined in some ways as a litter layer (leaves and other plant material on the ground) while at other times it seems that the leaves and other plant material formed a crust that is somehow adhered to the surface as a mat of vegetative material. As mentioned, a detailed re-write of this manuscript is required after which I would be glad to add further comment. As a start, I would suggest that the authors begin by addressing the following:

C1

Line 25 – the word “dangerous here seems too dramatic. Please consider changing. Line 26 – “human” should be “humans” Line 25-26 – Overall this sentence is a little awkward. Please consider revising. Line 30 – Remove the word “the” before nutrients Line 32 – Are “flow dunes” an actual type of dune? Please elaborate. Line 34-35 – Remove this last sentence and simply put in your own words and reference Geist and Lambin. Line 36-37 – I am not clear what is being stated here? Prevention and rehabilitation are being measured and if so how is that “applied continuously”? This is an awkward sentence. Line 37-40 – I have no idea what straw checkerboards are. Please provide a description. Line 44 – Please specialize what “groups” biocrusts belong to. Line 50 – 51. “Deciduous trees...” This sentence needs a reference. Line 54 “ the phrase “are of care” does not make sense. Line 54 – Do the authors mean “litter layer” instead of litter crust? Line 56-59 – I fail to see how interception and storage are transport processes? Please reword this sentence. Line 63 – No need for a comma after reference. Line 66-67 – This sentence does not make sense – please consider rewording. I think the main issue is the words “which through two basic mechanisms. Line 73-74. This sentence needs to be reworded or removed. Line 74-75 “The grain for Green Project...” This sentence needs a reference. Line 75 - What is E.g? If this is supposed to be “For example” then write “for example” Line 78: What kind of crusts? I am confused if we are talking about bio crusts or litter crusts. Line 86: I am sorry, but I am very confused. If this manuscript is only about litter layers, why does the introduction speak about biocrusts, which are not the same as litter layers. Line 91: I am not familiar with what a water-wind erosion crisscross section is. Please explain. Line 93 – 94 – Please write “monthly temperature” instead of just “temperature” Line 98 – Please state percentages to the nearest 10th of a percent. These values are in no way significant figures. Line 99: Do the authors mean “erosion resistance” instead of “corrosion resistance”? Line 102: I do not think the authors mean “removable” sand dunes. Please change. Line 109: I do not think *Populus* can prevent wind. Please reword to reduce wind speed at the surface or some other phrase. Line 112: Litters would not be the appropriate term here. Change to Litter layers. Line 114-116 –

C2

There is a serious issue with what the authors mean by litter crusts – as described in the introduction they were speaking of litter layers, and in the introduction biocrusts were references considerably. How the authors define litter crusts here is completely different. This issue really needs to be addressed as there is no way for the reader to actually know what is being studied. Line 122: replace “was” with “were” Line 127-128: So mosses are biocrusts? Again, very, very confused. Line 131: All samples were collected at the same moment? Really? I do not understand how this could be accomplished. Within the same 10-minute time period, same hour, maybe, but the same moment (ie, second)? Line 161-“. . .while avoiding produce leakage passages. . .” This part of the sentences does not make sense. Lines 199, 201,214, 215, etc – Please report numbers and percentages to the nearest decimal point. Line 240: Please reference some or all of the “few studies” Line 245 – Remove comma after “ground”

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-579>, 2018.