

Interactive comment on “Modeling postfire water erosion mitigation strategies” by M. C. Rulli et al.

Anonymous Referee #2

Received and published: 20 November 2012

The manuscript deals with an application of RUSLE model to a burned area to assess soil losses during the first year following fire, considering different scenarios without mitigation treatments application or with different emergency stabilization actions. Those soil losses are an important issue in the Mediterranean areas, frequently subjected to forest fires and subsequent erosive and hydrological risks.

The authors have used a detailed description of hydro-geomorphology to obtain a better resolution in the RUSLE model application to the study-area.

The authors have tried to estimate how fire can affect the C coefficient in the RUSLE equation and similarly, how different stabilization treatments can modify the P coefficient in the same equation. This is a crucial point in the use of the above equation in burned areas. In fact, as Larsen and MacDonald (2007) have stated, there is a

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lack of information on how these coefficients are modified due to fire impact and post-fire activities. I suggest the authors try to better justify the selected values for these parameters.

Some of the application patterns for the considered treatments do not seem to be very realistic (e.g. it is not usual to treat all the burned area) and it would be convenient the authors clarify that is partially due to they have proposed an exercise of the RUSLE application. It would be good a comment emphasizing the relevance of soil burn severity in the modification of RUSLE parameters and the incertitude introduced in this study, due the lack of that information. Also, a comment about the importance of fire severity for prioritizing the intervention areas would be welcomed.

I kindly encourage the authors to make these changes in the text to take a broader perspective of the problem and gain applicability in their interesting contribution.

Specific comments

Abstract

Maybe the first paragraph can be shortened and a bit more information about the results to be necessary.

Study Area (lines 17-22).Please, revise the figures, they seem to be not consistent (more than 100%).

Material and Methods

Page 10885. APAT is not in the references list

The pedological map of Sardinia reference is lacking.

Page 10886. Moore and Burch (1986) is not referenced.

Page 10889,please change log terraces by log barriers.

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This section would improve if the part corresponding the pre-fire values (firts two pages) is significantly shortened.

Please, check the inconsistencies between the reference list and citations throughout the text.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 10877, 2012.

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