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Interactive comment on “Recent human impacts and change in dynamics and morphology of ephemeral rivers” by J. A. Ortega et al.

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Dear Editor,

We appreciate very much your comments and attach the new manuscript with the minor corrections that you suggested.

In relation to Anthropocenewe have included a brief sentence and suggested references:

The recent capacity of human transformation in the river system can no be disregarded. Proposals about considering a new Anthropocene Era are being recently debated as anthropogenic processes might have significant and long lasting consequences (Za-

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lasiewicz et al., 2013). As Wohl (in press) proposes, understanding the historical context and our capacity to predict responses might be a challenge to test our scientific environmental comprehension.

The aim of the new sentence is to introduce a debate about human changes at the “critical zone”...scale of changes. However we don't try to focus our paper though Anthropocene, very interesting topic, but laterally related.

About Hec-ras method:

The editor comment: “The authors should also provide few more sentences on the comparison of the proposed methodology (and its limits), with other approaches available. HEC-RAS is not the only solution proposed in literature for such kind of analysis.”

The reason to include HEC ras model analysis is: Actually those are the ones that are being used in the area for planning.

The sentence about HEC-ras methodology have been rephrased as follows in the manuscript:

The Hec-ras model (Hec, 1996) was used for both sites as it is a widely used program and the one accepted in Spanish flood-prone areas mapping. This is a one-dimensional step-backwater program which uses the Bernoulli equation to model selected discharges by means of surveyed channel topography. This model has some limitations, as pointed out by Merritt and Wohl (2003), because simulated flow is one-dimensional and in many cases these ephemeral streams have multiple flow paths and also due to the unstable character of flash-floods. We have minimized the error by considering highly detailed High Water Marks, which are representative of peak stages, for model calibration (Baker, 1977). Results proved to be accurate using the HWM record of the 1997 flood in the Rivillas River and the use of straight reaches with less error, as Merritt and Wohl (2003) also assume in other ephemeral river models.

Thanks sincerely for your interest and suggestions that helped us to improve the

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manuscript.

Yours sincerely

The authors

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 917, 2013.

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