

Interactive comment on “River restoration: morphological, hydrological, biogeochemical and ecological changes and challenges” by M. Schirmer et al.

Anonymous Referee #1

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Title: River restoration: Morphological, hydrological, biogeochemical and ecological changes and challenges Author(s): M. Schirmer et al. MS No.: hess-2013-330

This paper offers a review linked with a case study on river restoration (I can't even define the objectives of the paper – pls see my comments below).

General comments: First of all, I would like to acknowledge the efforts by the author to address the issue of river restoration. However, I am afraid that despite me reading this m/s carefully several times, I am not sure what the actual goal of this study / article is. In my opinion, the attempt to combine a review paper with a case study has failed.

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The m/s is an unsuccessful attempt to mix a review paper and results from a particular case study by providing a “short overview on the literature [.. one would expect that in the introduction of a journal paper..] .. and present a case study of a restored river corridor...”.

In its current form, this article needs to be rejected. I am actually surprised that this m/s was even sent out for review. It does not meet – even closely – the standards of an international leading journal such as HESS. It also does not meet the scope of HESS. I am aware this might come as a disappointment – but the goal of this article (report?) is simply not clear; objectives are unclear, simply – there is no scientific contribution as presented currently.

The review / introduction section contains a large amount of trivial and rudimentary statements – which are of course correct, but one would expect them in a text book section, rather than as an introduction of a journal paper. This is to such an extent that I can't go into detail listing all these statements.

It is unclear to me what the specific objectives of this paper or study are. I don't think that any of the results stated in the abstract are really presented. The case study section reads – frankly – like a report for the funding body which funded RECORD (by listing and summarising a number of papers which stem from this project). It is insufficient for publication in a journal article.

I do think that showing at least some data – instead of just conceptual figures and graphics – is vital for a m/s published in HESS.

If the authors plan to resubmit this m/s I would encourage them to be (a) specific in their objectives; (b) adjust the abstract and introduction accordingly – and clearly lead towards current research challenges and needs which your particular study aims to address.... If you aim this as a synthesis paper of the “RECORD” project – then please be very specific in terms of your synthesised findings and wider implications.

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Specific comments: Abstract:

what are the specific results of your study? That the results show “complex patterns...” and that the “.. complexity is driven by river hydrology and morphodynamics” is hardly a novel result or new contribution to the scientific community. l.2 “dynamic changes” – of what? Introduction: As mentioned above, there are too many of trivial statements that I can not list them all here. Overall, the introduction section should be (a) massively shortened removing trivial statements (i.e. textbook knowledge) and (b) expanded in terms of specific and recent issues and research challenges (e.g. by focussing on much of the info given in section 2). p. 10917, l. 1: “underlying hydrogeological and ecological processes....” surely, it is not limited to these controls... as you state yourself in other parts of your introduction an adequate process understanding needs consideration of a whole suite of integrated processes and controls. l.7: i don't really see the point or need for Figure 1 here – particularly as you hardly refer to it or explain it. p. 10918, l.18 “...which serves as a typical example...” in which way “typical” or representative?

Section 3: Case study I highly recommend to restructure this section – and be much more specific with certain – crucial – information. What is presented is a unsatisfying list of previous publications – which leave the reader entirely uncertain what the main approach was which was applied – and what is the take home message. Please remember, this is a submission for a journal article, and not a report to a funding agency. I know this sounds unfair – but this is how this section is presented at the moment. For example, give a clear and short section on study site characteristics. p. 10920, l. 24 “flashy flow regime” – any data (plots, data) you can show as reference and to quantify?

Sections 4 and 5: I won't list any detailed comments as I do think this article needs to be entirely rewritten.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 10913, 2013.

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