

Interactive comment on “Creating a catchment perspective for river restoration” by L. Benda et al.

Anonymous Referee #2

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The paper is based on a catchment point of view and aim to provide an approach to support river restoration, especially in areas characterized by consolidated human structures. It is globally well written and yields a useful approach to detect sites of interest for a potential restoration project. It can be an important contribution for readers of Hydrology and Earth System Sciences and I therefore recommend its publication with only minor changes.

Abstract, introduction and core of the paper are well structured, but conclusions are poor. A comment about the presented approach and others in terms of results and recommendations could be added.

The method is based on a 5 meters digital elevation model, so results can't be any more precise. Why was this resolution chosen? Did the authors try to compare results

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coming from different DEM resolutions?

Since this article will be part of a special issue, it is useful to have inside the introduction short comments addressing other monitoring methodologies. I suggest adding references to the paper of Pasquale et al., HESS, 15(4) 1197-1212 about river restoration planning (page 2931, line 16); furthermore considering the processes and landforms which form the fluvial landscape (page 2932, line 7) I suggest considering the role of groundwater and adding references and to the paper of Schneider et al. HESS, this issue, in review.

SPECIFIC COMMENTS:

Page 2940, line 12. It is stated that the map of current extent of active channel and floodplain surface was made from satellite imagery (Google Earth) and in Fig. 9 it is specified to be Google Earth 2010. Authors could add which month and day images refer to and maybe write it directly at page 2940. Rivers without artificial constraints can have a very fast dynamic in terms of gravel bars and islands: they can be created, deleted or deeply modified in a lag of few months, especially in presence of high flow rate. For this reason precise and explicit dating of satellite imagery is important. It may also be interesting to compare different-dated images coming from Google Maps itself to figure out active channel dynamics in natural areas (stated to be 15% of the catchment) and more artificial ones.

Page 2931, line 18. “Gilvear and Casas, 2005”, cited in the text but not listed in the References.

Page 2935, line 7. “Alcala-Zamola, 2006” , cited in the text but not listed in the References.

Page 2935, line 14. “Garcia de Jalon, 1997 ” cited in the text but not listed in the References.

Page 2941, line 6. “Castro, 1977 ” should be “Castro, 1997 ”, year of publication

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between text and References does not match.

Page 2952, line 18. "Eros et al., 2010" cited in the text but not listed in the References.

Page 2957, line 18. "Brierley, G., Fryirs, K., Boulton, A., and Cullum, C.: Working with change: the importance of evolutionary perspectives in framing the trajectory of river adjustment, in: River Futures: An 20 Integrative Scientific Approach to River Repair, edited by: Brierley, G. and Fryirs, K., Island Press, Washington, DC, USA, 65–84, 2008." Referenced but not cited in the text.

Page 2958, line 21. "Garc'Ása de Le' aniz, C., Serdio, A., and Consuegra, S.: Situaci 'on actual del Salm'on Atl ' antico en Cantabria, Present status of Atlantic salmon in Cantabria, in: El Salm'on, Joya de nuestros r'Ásos, Direcci 'on General de Montes y Conservaci 'on de la Naturaleza, edited by: Garc'Ása de Le' aniz, A., Serdio, A., and Consuegra, S., Gobierno de Cantabria, Santander, 55–82, 2001." Referenced but not cited in the text.

Page 2963, fig. 1. The scale on the right is too small to be read easily.

Page 2967, fig. 5. Scales for pictures on the right are missing. Where are sections, which elevation profiles refer to, into satellite images? It is not always clear. I'd also suggest looking at Schäppi et al., Computer and Geosciences, 36, 707 – 716 (2010) for an approach to detect riverbed profile below water level.

Page 2968, fig. 6. Scales of the pictures are too small to be read easily.

Page 2971, fig. 9. Scales of the pictures are different-sized and not always easily readable.

Page 2973, fig. 11. Scales of the pictures are different-sized and not always easily readable.

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