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Discussions

Interactive comment on "Water yield following forest–grass–forest transitions" *by* Katherine J. Elliott et al.

Anonymous Referee #2

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Overall this is a good paper from a distinguished team using long-term data sets with a history of quality measurement. That's the good part. The bad part is that the paper does take a lot of following and reading, and after going through it a number of times, I'm still not entirely sure about the methodology. I think that this may reflect on the reviewer more than the writers, but the paper is a bit uncompromising in its terse presentation of information; to my mind that detracts a little from what is . overall, a fine piece of work. Some of my comments relate to the need to perhaps "help" the readers a little.

I think that the paper would be improved a little by better graphics. Firstly a picture or two of WS6 at various stages would help. Similarly, a "time-line" of its treatments would also be useful. A small map showing the various watersheds would be good, too.

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I presume that the authors are trying to suppress a certain amount of detail – such as the development of Equation 1 (which presumably goes back a long way). For the non-hydrologists such an equation would be pretty enigmatic; I guess it is a judgement call for the authors, but it is asking readers a lot to swallow this at one gulp, so to speak. Ditto the frequency-pairing method.

The authors raise the very interesting point about non-stationary "controls" during these long-term paired watershed studies. It is probably the weakest point of this approach once they get past four or five decades (but when these were put in, who envisaged them going that long?). The difficulty is that I am not sure what one might do on this matter. Perhaps the authors could talk about this a bit more?

So overall, it is a fine paper but a bit hard-going in its methods. The "discussion" probably needs a bit of tightening since it is to some extent speculative. I think that it would be worthy of a longer paper in which the methods are teased out and there is more explanatory hydrograph detail. As an aside, I have always found it annoying that Dunford and Fletcher (1941) commented on the loss of the diurnal variation (if I recall correctly) but that no one ever seems to have looked at this again (i.e. how long did it take to reappear), and wonder if such a longer paper might also include indicators like this.

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