

Editorial

Ecohydrology Bearings: Invited Commentary to challenge paradigms, question assumptions, prioritize needs and enhance interdisciplinary dialogue

Ecohydrology as an interdisciplinary field is currently experiencing rapid growth. Advances are being made by focusing on feedbacks between ecological and hydrological processes and through increasing associated dialogue between ecologists and hydrologists. The interaction between ecology and hydrology and the integration of these two disciplines are two central themes of focus for the journal *Ecohydrology*. Developing our understanding of such interactions is crucial for providing solutions to current problems related to managing our natural resources under concurrently increasing human demands and climate change effects. As noted here previously in the opening editorial for the journal, ‘the real challenge is to form a bridge between ecologists and hydrologists in order to reap the scientific benefit of emergent synergies’ (Smettem, 2008). In addition, we need to simultaneously harvest this enhanced scientific benefit to address a variety of pressing environmental challenges.

Ecohydrology as a journal serves as a new source for publication of specific research findings that are placed in a broader context, including both primary research and review papers. The broader insights that emerge from these papers contribute substantially to advancing our field. Sometimes, though, the greatest influence in advancing a field comes not from a specific research paper but rather from a particularly insightful commentary where the author is charged with challenging the prevailing zeitgeist in the research community. Such commentaries can yield new insights in a variety of forms that often include one or more of the following characteristics, which they share with other types of influential papers:

- a previously overlooked process that is increasingly recognized as being important (e.g. partitioning of evapotranspiration between evaporation and transpiration, Williams *et al.*, 2004);
- an implicit assumption that may need to be re-examined (e.g. occurrence of additional hydrological flows within bogs, Baird *et al.*, 2008);
- a cross-cutting issue (e.g. dealing with scaling and thresholds, Newman *et al.*, 2006);
- identification of gaps in dialogue (e.g. terrestrial vs aquatic systems, Hannah *et al.*, 2007) or approach (e.g. modelling vs empirical approaches, Brooks and Vivoni, 2008);
- prioritizing research agendas (e.g. emerging ecohydrology needs, Hannah *et al.*, 2007);
- specifying and addressing gaps between knowledge and application (e.g. management of groundwater-dependent ecosystems, Eamus and Froend, 2006);
- providing a unifying framework that integrates previously disparate perspectives (e.g. linking geomorphological and ecohydrological perspectives, Caylor *et al.*, 2005);
- pointing out new interdisciplinary interfaces that need to be brought together (e.g. the emergence of ecohydrology itself, Rodriguez-Iturbe, 2000).

In one way or another, each of these characteristics tends to fundamentally enhance and/or alter our perspectives of the systems we study and manage.

Insights of this kind often can have large influences on the development of a new research field. We are adding a new type of commentary to the journal *Ecohydrology* that will be titled ‘Ecohydrology Bearings’ in which we will seek to present thoughtful and potentially provocative invited, peer-reviewed commentaries with characteristics such as those listed above. Of course many papers already being published within *Ecohydrology* and elsewhere often do and should strive to address the criteria above, where appropriate. We hope that by specifically identifying and soliciting a set of such commentaries, we can promote a more rapid advance in the field by regularly taking ‘bearings’ of where we are and where we might need to look toward in the future. We begin this series with a perspective by Jackson *et al.* (2009) titled ‘Ecohydrology in a human-dominated landscape’. This thought-provoking paper is insightful and includes several of the characteristics listed above. We hope Ecohydrology Bearings will provide an additional and particularly insightful dimension to the publications in *Ecohydrology*, and will further catalyze advances in the field.

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