Editors of several journals in the field of hydrology met during the Assembly of the International Association of Hydrological Sciences—IAHS (within the Assembly of the International Union of Geodesy and Geophysics—IUGG) in Prague in June 2015. This event was a follow-up of a similar meeting held in July 2013 in Gothenburg (as reported by Blöschl et al., 2014). These meetings enable the group of editors to review the current status of the journals and the publication process, and share thoughts on future strategies. Journals were represented in the 2015 meeting through their editors, as shown in the list of authors. The main points on fostering innovation and improving impact assessment in journal publications in hydrology are communicated in this joint editorial published in the above journals.

In the last few decades, the dominant practice of universities, governments, and research funding organizations in assessing individuals or research proposals has been to use the number of papers published—sometimes separating those in high-impact journals—and number of citations as the main benchmarks, rather than true innovation (including new ideas, original methods, discovery, and improved application of technology). This has resulted in consistently increasing pressure to publish in journals—the “publish-or-perish” syndrome. In turn, this has transformed the publication industry (e.g. with the creation of numerous for-profit publication vehicles) as well as the peer review system per se. Specifically, with the plethora of journals, “peer review […] is becoming a system that judges where work is published rather than whether the research is publishable (a ‘where rather than if’ process)” (Peres-Neto, 2015). In the majority of journals represented in this editorial, submissions have dramatically increased. As a response, some of the journals have increased the rate of desk rejections, i.e., rapid rejections by the editor without sending the papers out for peer review, with the objective of reducing the pressure on the review system.

It is the common agreement of all editors that the peer-review system is a key component of the publication process and essential for scientific progress of the community. Maintaining the highest quality of the peer-review process is thus crucial. However, the system has several weaknesses. Some of its critics have characterized it in strong language, e.g., as a “non-validated charade whose processes generate results little better than does chance” (Horrobin, 2001), and a recent editorial Comment in a medical journal (Horton, 2015) stated, “The case against science is straightforward: much of the scientific literature, perhaps half, may simply be untrue.” After completing a systematic survey of more than 1000 manuscripts submitted to three elite medical journals, Siler et al. (2015) concluded that “on the whole, there was value added in peer review,” even though “both errors of omission [rejecting a worthy article] and commission [publishing an unworthy article] were prominent.”