values above 0.9, editors would be forced to search for at least 29 reviewers if they want to ensure that refusals based on consecutive negative responses did not originate by chance. Because journals usually secure at least two reviewers for each manuscript, it is easy to see how a large number of manuscripts could be potentially excluded from the peer-review process due to the lack of reviewers if this approach was implemented by other journals.

Several alternatives to the traditional peer-review process have been proposed, some of which have already been put into practice. Entirely "open" peer-review systems such as F1000Research (http://f1000research.com) increase the transparency of the review process and ensure that research is communicated even before the review process has ended. Other initiatives include third-party review services such as Peerj (https://peerj.com), Axios Review (http://axiosreview.org), or "Peerage of Science" (https://www.peerageofscience.org). Such services have arisen – in part – as a response to the reviewer crisis but focus their solutions on an improved targeting of submitted manuscripts to a journal's scope and to reducing unnecessary reviews for a given manuscript. "Peerage of Science" also aims to recognize the most active and "best" reviewers, to allow for tangible benefits being received by reviewers when doing their work. Early testimonials from such services appear promising and are elements of a rapidly evolving publishing landscape (Hames 2014).

Nevertheless, these alternatives, or any of the above strategies when implemented alone, will not easily transform our current peer-review system in the short term. Given these first signs of system collapse, urgent and pragmatic measures are needed to explicitly increase the pool of reviewers and strongly reduce their burden of work. Different solutions may be available and include the promotion of more early-career scientists into active reviewing, and the reduction of unnecessary reviews via improved inter-journal coordination. The peer-review process will also greatly benefit from multi-tiered review approaches. In these cases, an initial screening stage, involving a representative number of reviewers, could represent a first, simple, standardized assessment of the potential quality of a manuscript that (upon approval) could move into a second, stricter round of reviews. Reviewers would then have the possibility to better adjust their effort to the potential quality of the manuscripts, and journals would help to ensure fair decisions within the peer-review system. Finally, the scientific community needs to recognize the critical role of reviewers within the broader debate of where the peer-review process is heading. Given that it represents the cornerstone of science, a reviewer's efforts should start to be seriously included as part of that researcher's professional merit by his or her respective academic institution.

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Engineered artificial flooding: more questions than answers

We welcome the timely review by Bond *et al.* (*Front Ecol Environ* 2014; **12[7]**: 386–94) on the ecological risks and opportunities presented by engineered artificial flooding for environmental objectives, and commend the authors for reinvigorating the debate on this important topic. We concur both with the authors and with Pittock *et al.* (2013) that engineered artificial floods are narrow in their focus and that their associated risks have received insufficient attention. Furthermore, we question the strength and relevance of some of the evidence used to justify engineered artificial floods and suggest that adopting this approach would send us down a path that is expensive and restrictive – one that allows only limited opportunities to reverse decisions should the approach prove ineffective. Lastly, we contend that a wider discussion of alternative strategies for ecologically effective floodplain river restoration is needed.

In most cases of engineered artificial flooding, the expected ecological benefits are far from proven to result from the intended actions or to persist over long periods. In The Living Murray initiative in Australia's Murray–Darling Basin, which was used as an example by Bond and colleagues, engineered artificial flooding is premised on meeting "ecological objectives" or targets and apparently on maximization of utility or benefits from the use of water; that is, it seeks to achieve more with less (www.mdba.gov.au/what-we-do/working-with-others/ten-years-of-tlm-program). Structural works (water management structures such as flow regulators, channels, and levee banks) aim to produce specific ecological outcomes by inundating selected wetlands with less water than is present in natural flooding. The success of maximization approaches is contingent upon high levels of confidence in our understanding of ecological processes, as well as in the predictive capacity of models. There is little evidence for such high levels of confidence.

Although engineers may be confident about the achievable hydrological and hydraulic outcomes, the ecological outcomes are conjectural. There is inadequate evidence of the long-term positive responses to artificial flooding events for such ecological targets as tree recruitment or waterbird breeding. Short-term studies often cite confounding factors, such as natural events or antecedent conditions. Even if more detailed hydrodynamic models (such as those provided by Bond and colleagues) are applied to engineered flooding, several questions remain unanswered. What spatial and temporal scales should be considered for natural variability to accommodate the life histories of the target biota? Is there sufficient knowledge to optimize watering actions to achieve multiple ecological objectives, such as tree recruitment *and* waterbird breeding? Given that there are an estimated 30 000 wetlands in the Murray–Darling Basin, is it feasible to supply water to more than just a handful of them?

Besides being largely untested, structural works such as those in The Living Murray are literally and metaphorically "set in stone". They are expensive to decommission, limit future adaptation options, and require considerable funding for management, maintenance, and monitoring (Pittock *et al.* 2013).

In dynamic systems that cannot be restored to a pre-altered state, where antecedent conditions cannot be replicated and where responses to intervention are largely unpredictable, emerging ideas such as "open-ended restoration" merit consideration (Hughes *et al.* 2012). In contrast to target-driven restoration, open-ended restoration involves minimal intervention, the acceptance of novel trajectories of ecological change, and rigorous monitoring (Hughes *et al.* 2012). Examples of open-ended restoration might include: breaching floodplain embankments so that floodplain habitats are inundated at lower discharges (Schiemer *et al.* 1999); providing translucent flows through dams, whereby a proportion of water entering the dam is released at all times (Growns and Reinfelds 2014); or riparian fencing to limit grazing by livestock. Adopting open-ended restoration in systems that are already highly altered and managed is undoubtedly problematic, but surely feasible: consider, for instance, the 51 dams removed in the US in 2013 or the purchase of floodplain easements through the US Emergency Watershed Protection Program since 2009. We argue that engineered flooding should be given proper scrutiny before being implemented in both altered and relatively intact systems. Open-ended restoration seeks to make ecosystems self-sustaining, rather than make them highly reliant on ongoing management and vulnerable to unforeseen future possibilities. Through adequate monitoring, this restoration method could allow the development of ecologically effective means for restoring floodplains and their rivers.

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