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Editorial

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With climate change all over the mass media and the United Nations' Sustainable Development Goals as a target, water problems remain in the spotlight and progress seems partly – if not completely – conditioned by water-related issues. An unprecedented transformation of our sector appears to be awakening and advances should come through the production of knowledge and its effective transfer. *Water Management* is, and will be, devoted to both professional and research challenges associated to our most precious fluid. Amongst the various hazards and difficulties that our professionals have to deal with, the present issue of *Water Management* draws out interesting findings on reservoir operation under water-scarcity scenarios, contaminant dispersion in compound channels with floodplain vegetation, turbulence structure of the flow over brush fish passages, and stability and failure modes of cohesive banks in curved channels.

Intrinsic challenges in water management, with competing water demands and potential water conflicts, are augmented when operating under drought scenarios. With summer having led to extreme heat in many sparse geographical locations around the globe, and dry periods becoming longer and more intense, it is easy to understand the importance of optimal management of the increasingly limited water resources. As highlighted by Bozorg-Haddad *et al.* (2019), sophisticated methods, such as metaheuristic algorithms, may assist improving reservoir operation in order to deal with water resources bankruptcy.

The other three articles in the present issue deal with eminent modern hydraulic problems, which are addressed through exhaustive physical modelling efforts. The work of Farzadkhoo *et al.* (2019) addresses how cross-sectional average contaminant concentration disperses in compound channels due to turbulence. The crucial role that vegetation poses on this hydraulic problem is the driving force of this research. The focus is put on the streamwise turbulent transport, and numerous seminal works are revisited to assist the practitioner on choosing proper parametrisation for their riverine systems.

Rigid structures have filled previous pages of *Water Management*. In this issue, Kucukali (2019) discloses the turbulent structure of flows around bristles, which arise as an alternative, flexible solution to conventional fish passages. Vegetation, interacting with the flow field, results in complicated, sometimes unexpected, velocity fields and energy dissipation rates. Kucukali (2019) includes different bed slopes and bristle densities, which provides the expert designer with reference values for energy dissipation and a good understanding of the flow structure.

Bank stability and erosion are to be considered in the study of the evolution of river systems, more importantly in fluvial areas with relevant socioeconomic zones in their surroundings. However, cohesive sediments introduce some essential challenges that have impeded their inclusion in experimental studies. The study of cohesive sediment erosion and failure mode of banks brings together two disciplines: fluvial hydraulics and geotechnics. Careful and heavy experimental efforts are necessary to allow simple empirical correlations, which aim to accurately upscale laboratory results. The paper presented by Yu *et al.* (2019) sheds light on the spatial variation of sidewall shear stress distributions in cohesive bank erosion processes in curved channels. Dominant failures are thoroughly discussed, which can help to protect river structures and assist on the planning of future research efforts.

The Editorial Panel of *Water Management* hopes that the articles presented in this issue will provide readers with answers to open questions and motivate discussion among their peers. We encourage our readers to actively contribute to successful future issues of the journal by taking part through submission of new content and discussions on recent articles.

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