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STORMWATER REPORT

The Science of Flood Control

Stormwater management often is considered the water sector's most dynamic segment. It occupies a place at the center of a constant stream of research in fields ranging from climatology to geology and engineering to urban planning. The ever-expanding body of knowledge that underpins stormwater and watershed management represents both an opportunity and a challenge. On one hand, new insights on ways to maximize the potential of bioretention could lead to better-performing green infrastructure designs. On the other, the pace at which new breakthroughs are made demands that stormwater professionals adapt just as quickly to protect their communities. This edition of [Stormwater Report](#) offers a digest of the latest groundbreaking research in the stormwater space.

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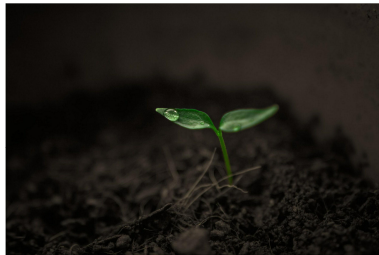


Researchers Identify Likely Locations of Rare, Destructive River Avulsions

Because of their rarity, river avulsions — which occur when temporary flooding results in permanent changes to a river's course — are difficult for researchers to predict. However, a May 2022 study offers hope in understanding where river avulsions are most likely to occur, as well as how human activity may affect that likelihood. [Read more about river avulsions and the areas most prone to them during heavy storms](#).



Common Minerals Maximize Nutrient Capture in Bioretention Media



Finding the optimal bioretention media mixture to handle both the quality and quantity of runoff often requires green infrastructure planners to think beyond conventions of sand, silt, and soil. By adding zeolites, for example, new research demonstrates that infrastructure designers can maximize nitrate removal in bioretention cells. [Study authors describe that adding zeolites can make bioretention more effective, particularly in agricultural settings](#).

New Insight Informs Complex Relationship Between Dams and Downstream Flooding

Conventional wisdom says dams upstream from densely settled areas can keep flood-prone rivers from experiencing dangerous and costly floods by controlling when and how

much water flows downstream. However, new research published in the journal *Nature Communications* shows that under certain hydrogeological circumstances, dams could instead increase downstream flood risks rather than mitigate them. [Learn more about the international research team's counterintuitive findings.](#)



[Stormwater Infrastructure in the Face of a Changing Climate](#)



Watch a replay of this two-hour webinar organized by the Water Environment Federation (WEF) Stormwater Committee. Modelers and stormwater management practitioners from across the U.S. weigh in on ways to integrate climate change into long-term watershed planning efforts. The recorded webinar, which took place May 25, focuses on a broad range of climate change adaptation strategies applicable in a diversity of settings. [Get details on the webinar, which is free to WEF members, in the WEF Learning Center .](#)

[WEF Stormwater Institute Seeks Collaborators on Asset Management](#)

The Water Environment Federation (WEF; Alexandria, Virginia) Stormwater Institute and its partners are launching a national-level initiative to improve asset management strategies for stormwater infrastructure. We want your municipality, utility, or research organization to be a part of it. [Learn more about how your organization can help make asset](#)



*management easier for the stormwater
sector.*



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