

# Stanford scientist examines ways to put stormwater to use in big cities

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Runoff from rainstorms in big cities can represent both threats and opportunities. Too much runoff in the wrong places causes flooding. Too little rainwater in the right places leads to dried-up creeks and rivers. Water that washes up pollution from city streets can dirty downstream watersheds. Figuring out the best solutions to these problems requires lots of data - data that are easy to get in highly developed countries, but much scarcer in others.

On Dec. 15 at the American Geophysical Union Fall Meeting in San Francisco, Perrine Hamel, a postdoctoral scholar with the Stanford Woods Institute for the Environment, will speak on "Mapping Stormwater Retention in the Cities: A Flexible Model for Data-Scarce Environments." At 9 a.m. PT at the San Francisco Marriott Marquis, Salon 13-15, she will present work in progress to model the ecosystem and financial benefits of "natural capital," such as undisturbed watersheds or urban biofilters for managing stormwater.

"It's really trying to mimic what would happen in a natural watershed," said Perrine.

Initially, Perrine and co-author Bonnie Keeler from the University of Minnesota Institute on the Environment plan to study the data-rich Capitol Region watershed in St. Paul, Minnesota. Then they plan to extend that work to the data-poor settings of São Paulo, Brazil, and Addis Ababa, Ethiopia.

Their goal is to determine the value of stormwater retention services for large cities in developing countries, and to compare their benefits to those of other services like recreation or urban heat island mitigation. Natural Capital Project partners World Wildlife Fund and The Nature Conservancy want to help large cities like Addis Ababa develop in ways that enhance the provision of ecosystem services and that don't create future problems from [stormwater runoff](#).

Provided by Stanford University

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