Study: Managed aquifer recharge a drought buster

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Strained by drought in recent years, California desperately needs more resilient water supplies. An affordable solution that provides a wide range of benefits is within reach, according to a Stanford study.

Published in San Francisco Estuary & Watershed, the study reveals the costs and benefits of using groundwater recharge and storage across the state. This process, known as “managed aquifer recharge,” or MAR, can incorporate co-benefits such as flood control, improved water quality and wetland habitat protection. The study found the median cost of MAR projects is $410 per acre-foot (the amount of water required to cover an acre of level land at a depth of 1 foot) per year. By comparison, the median cost of surface water projects is five times more expensive – $2,100 per acre-foot.

Managed aquifer recharge allows for local water storage, access and management to a much greater extent than large surface water reservoirs, which are often managed by state and federal entities. Although excess surface water can be limited in some regions of California, treated wastewater and urban stormwater offer sources for MAR that aren’t fully utilized by centralized surface water storage infrastructure.

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