Water Management to Meet the Needs of the Twenty-First Century

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Abstract:

Globally, our water supply is becoming increasingly dependent on groundwater, but as a direct source and as a means of water storage. Climate change and population growth will only serve to increase our reliance on groundwater. To sustain groundwater supplies, we will therefore need to ensure sufficient aquifer recharge to minimize water-level drawdown. However, a larger threat to groundwater supply looms. In nearly every aquifer, a geogenic contaminant lies in wait within the sediments. The question is therefore not whether a contaminant exists within the subsurface but whether the guiding biogeochemical processes will lead to its partitioning into the water. Understanding, predicting, and controlling the soil processes that underlie groundwater quality are critical for sustaining our food and water in the 21st Century.