

Artificial Groundwater Recharge

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With increasing demands on water supplies, it is important for states historically abundant in groundwater supplies to consider avenues for enhancing groundwater recharge. Artificial groundwater recharge can be described as increasing the natural replenishment or percolation of surface waters into the groundwater aquifers, resulting in a corresponding increase in the amount of groundwater available for abstraction. Common sources of recharge water are treated wastewater, storm runoff, and surface water bodies. States use artificial recharge for a number of reasons: the maximization of storage (including seasonal, long term, and drought or emergency water supplies), physical management of the aquifer, water quality management, management of water distribution systems, and ecological benefits. Large-scale projects can be found in states such as California and Florida, which experience significant demands on their water supply.

In the past, the New England states and New York were not concerned with enhancing groundwater quantities because supplies were always adequate. But last year's drought threatened water supply levels and led to very real concerns about water quantity. Those concerns have lingered as land development continues to increase in the region, decreasing the amount of permeable ground available for natural recharge. A number of artificial recharge projects are now underway, although small-scale projects are more common in the area than large-scale projects. Examples of projects in New England include directing stormwater to spreading basins, wetlands, and infiltration basins. Indeed, one of the more popular large-scale techniques, Aquifer Storage and Recovery (ASR), is not even practiced in the region. ASR is the storage of water in a well during times when water is available, and recovery of the water from the same well during times when it is needed. According to a 2001 American Water Works Association survey, more than 50 ASR facilities exist in the U.S. Many states are finding success with ASR wells, and the Northeast states are taking a proactive approach by exploring what other states have accomplished.

None of the states have artificial recharge policies, so the New England states and New York have been studying available artificial recharge methods and policies in order to adequately protect groundwater aquifers. NEIWPC has taken the initiative to educate the states by writing a white paper on the subject, which outlined and analyzed the methods of artificial groundwater recharge, examined current regulations, and reviewed New York's groundwater recharge history. At the latest quarterly meeting of NEIWPC's Groundwater Managers workgroup, Eileen Pannetier, President of Comprehensive Environmental Inc., spoke about her experiences with artificial recharge. The talk was one more way for the New England states and New York to learn about what is available as they plan for future water demands and uses.