

Staying Green

*Low-Cost Ways to Keep Rainwater
in Your Garden*

By DENNIS ALLEN



Rainwater is a precious resource. Mostly it's sent to storm drains and channeled, with gathered pollutants, into the ocean. There are better ways. The goal should be to maximize storage and infiltration of rainwater with the least effort and cost.

Rain gardens, a recent concept in landscape design, are shallow depressions a couple of feet deep and of varying size, which get filled with permeable materials (gravel, mulch, etc.) and planted with deep-rooted native plants. They collect rainwater from impervious surfaces such as rooftops, driveways, sidewalks, or patios. Plant selection is crucial, for they need to be able to withstand extremes of flooding and drought as well as concentrations of nitrogen and phosphorus, elements commonly found in stormwater runoff. Good plant choices are local wildflowers, grasses, sedges, ferns, and native shrubs. Those with deep roots provide the most cleaning and filtering benefits to the environment.

These indentations augment soil permeability, recharge groundwater aquifers, and build microbial activity and soil health. Above ground they add pleasing aesthetics, encourage diversity of birds and wildlife, and reduce the need for irrigation. A bonus is their ability to capture carbon. The cost of creating a rain garden is small, minuscule compared to the cost of stormwater drains.

When creating the landscape for our downtown property 10 years ago, our aim was to retain all rain on site and infiltrate it into our soil and vegetation. This led to creating many small water-harvesting "sponges," mini rain gardens. On our small urban lot we planted native and Mediterranean species to attract birds and beneficial insects plus 30 fruit trees. We also created a vegetable garden area where the soil is continuously enriched by compost from our kitchen waste.

Another strategy we employed, because we were creating the landscape, was to build an underground reservoir using infiltrators buried two feet deep. Made of recycled polyethylene, these arches, 20 inches high, three feet across at the base and five feet in length, can be interlocked to handle large "surge" volumes of stormwater and store it until it seeps into the ground. We linked infiltrators together to form 50-foot-long tunnels that have successfully retained all our stormwater on site.

Although not inexpensive to install, because of the excavation involved, infiltrators nevertheless cost less than permeable paving or drywells, while accommodating much larger quantities of stormwater. Also, they usually cost less than vegetated roofs or rainwater collection systems, other approaches to keeping rainwater on site. In addition to the "sponges," plant selection, and infiltrator reservoir, we installed a 14,000-gallon rainwater catchment bladder to collect the rain for irrigation from the rear building. Such a system is expensive and should be created only after low-cost, low-effort strategies have been implemented.

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