

Rainwater and Greywater: Underutilized Resources?

by Sam Wilson

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Every time it rains, it rains pennies from heaven—so go the whimsical lyrics of a Depression-era song that today, given the way water rates are rising, might seem to have anticipated a looming reality. But frugality isn't what motivates today's most enthusiastic proponents of home- and community-based retention of stormwater runoff.

Marin's most active advocate is the Salmon Protection and Watershed Network (SPAWN) whose conservation research director and newsletter editor, Paola Bouley, spearheads the effort. "The paradigm of how we manage water on our landscapes has been to just pave and pipe away," says Bouley, "and the cumulative effect has had a profound effect on salmon habitat. The peak of runoff flow has increased, with much more intense runoff patterns—a common signature of urbanization—and the runoff is pretty much washing away the fry that would otherwise spend a year to a couple of years in the stream."

Bouley wants to encourage people to view rainwater as a resource and to regain watershed functions, such as percolation to groundwater through permeable landscapes. She put together her first rainwater collection system a couple years ago, capturing rooftop runoff in eight recycled olive barrels. She has since replaced the barrels with a 550-gallon cistern, from which water is pumped to a second cistern, with a 1500-gallon capacity, located uphill from the house and gardens. This allows a gravity feed for landscape watering in the summer.

Capturing rooftop runoff is the most sanitary and efficient way to retain rainwater in a suburban setting such as the Ross Valley. Based on average rainfall here, one can expect about 25,000 gallons of water to run off 1,000 square feet of roof during the rainy season, a volume that few homeowners would care to store. Even a 1,000-gallon tank is a significant presence in a landscape (see accompanying photograph), so provision has to be made for almost as much runoff as without a storage tank. Bouley advocates directing overflow water into landscape features, such as depressions (known as swales), that restrain flow and facilitate percolation.

Even at the lower end of the price range for small cisterns—tanks made of polyethylene—storing rainwater at home isn't going to make financial sense for most people any time soon, particularly in Marin's climate of sharply delineated wet and dry seasons. So SPAWN is directing much of its effort toward institutions, particularly schools, with education as a primary goal. Over the past year the group assisted in



Pam Hartwell-Herrero, director of Sustainable Fairfax, stands between the standpipe (at the right edge of the picture) that receives inflow from the downspout and the 1,000-gallon tank that receives inflow via the pipe buried beneath the walkway. The system functions by gravity, with water drawn off by a hose bibb at the bottom of the tank. Photo by Sam Wilson

installing 18 such projects. Bouley suggests paying a visit to the one at Manor School to see how a “green team” of students and parents has integrated a system into the school grounds.

Another can be visited at the Sustainable Center in Fairfax, at 141 Bolinas Road, across from the town offices. One can check out the grounds there any time by going around the back and through a gate. Practical applications are the focus at this diminutive, vintage house that is maintained by the non-profit Sustainable Fairfax, a group that also advocates household reuse of “greywater.”

Greywater is water that has been more or less sullied by previous use—toilet water is outside the class. Under current state and local regulations it is illegal to pipe, store, or apply to land surfaces any greywater, regardless of previous use.

At the county level, Armando Alegria, an environmental health specialist with Environmental Health Services oversees permitting for subsurface disposal systems— basically shallow leach fields—that are required for all types of greywater. Alegria allows, however, that not all greywater is created equal: “There’s a basic perception that greywater doesn’t pose a public health risk, and I take issue with that, but it does depend on what kind of greywater is being used. If it’s from a sink it’s less of an issue, shower more of an issue, clothes washer big issue. Studies have shown that coliform bacteria and viruses can be transmitted by washer drain water—reusable diapers are a particular problem.”

When I told Alegria that I keep a stainless steel pot in the kitchen sink to collect rinse water, which I use to water the plants on the deck off the kitchen and the garden below, he didn’t seem too concerned. He foresees “substantial changes coming in the standards for greywater reuse” for such purposes as toilet flushing and landscape watering. Application to mulched basins is one possibility under consideration for this resource, which, unlike rainwater, is predictably produced year-round.

For more information on both rainwater harvesting and greywater the Marin Municipal Water District website provides several helpful links. Go to www.marinwater.org, click on conservation (from the menu at the top of the home page) and then select either “Rainwater Catchment” or “Graywater” from the menu on the left side. Conservation Links” also takes you to an additional list of information sources for conserving water.

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