

*FREE RAIN: Practical Actions to Public Policy
A homeowner's perspective*

The sky is blue again today. I am lounging on the deck at the warm southern end of my house contemplating how little rain we have had this year in contrast to last year's deluge. It is winter in name alone, for it feels like spring in terms of the air temperature and the fragrant blossoming of my fruit trees. I observe the avian denizens of my backyard pond and appreciate the serenity of this water feature. Three jumbo (3000 gallons each) rain tanks face me and I am feeling a bit smug knowing that they are already 2/3 full despite the limited precipitation. The two images are very much entwined. Water is life. I think about how we, as Americans, think of water. Author, farmer and visionary, Joel Salatin described it this way.

If we made a list of resources Americans take for granted, the top spot would go to water. Water is so essential for life that throughout history its availability dominated decision-making and community planning. Its acquisition required a heavy investment. For most of human history, people have toiled water, dug cisterns, bored wooden water conduits. They have invested, viscerally and personally in their own water issues. They didn't have a phone to call the utility company. They had to understand access, gravity – since they didn't have pumps – and domicile location relative to available water. Even if you located your house near a spring or stream or dug a well, you still had to carry the water to the house. "Indoor plumbing" is a fairly recent invention. When you have to carry all your water, it becomes precious. You don't waste it.
Joel Salatin, Folks, This Just Aint Normal

So how was it that I began to harvest rainwater? Saving water from a rainy day is not a new idea. It actually is quite an ancient concept for insuring water security. My experiment with it actually began with a broken gutter and much toting of water. Not being particularly handy when it comes to home maintenance, I knew I would soon be consulting with a gutter company to do the repair. "But wait...I am an environmental educator," I say to myself. "I need to do something more responsible and sustainable. Since I had to fix the gutter anyway, why not start harvesting rainwater." I'd been reading about global water issues and knew that California was a state of particular concern in this regard. Water was to be the new oil.

According to reliable sources one third of the world's population is living without access to adequate supplies of freshwater. By 2025 up to two-thirds of people in the world may be facing serious water shortages, including people in 35 percent of cities in the United States. Arizona, California, New Mexico, and Nevada are already facing water shortages. (Source: Water Consciousness edited by Tara Lohan)

Going with the Flow

I tried several practical measures to deal with the flow of water off my roof near my front door. First, I used buckets to collect the water cascading from the hole in the gutter. I soon realized just how much water comes off the roof in a rainstorm. My method was clearly inadequate. So I brought in bigger containers. This time I used 25 gallon plastic garbage cans. These held more water, but were too heavy to drag to my pond where I intended to use the water. (It should be noted here that rainwater is the ideal choice for

replenishing water lost to evaporation from a natural pond. Treated water is toxic to fish, amphibians and aquatic invertebrates.)

As I was transferring water in 5 gallon containers from the garbage cans to the pond, I began to feel the absurdity of it all. "Was it really that important to conserve water?" I thought to myself. The answer for one opposed to waste in any form, "Unequivocally, yes!" But, this was time-consuming and backbreaking work! The water flow was considerable and I literally could not keep up with it. I was sure that had anyone been watching this dance from a distance, they would find it highly amusing.

Doing the Math

I learned when I began researching rainwater harvesting that there is, indeed, a formula for determining the amount of rain that falls off a certain size roof during a typical rainy season in our area and I did the math. (see side box) It convinced me that this was the time for a system to harvest as much as possible of the 25,000-30,000 gallons of water coming off of my roof annually, filter it, convey it and let it come to rest in dark-colored storage devices. I will save you the part about finding a contractor and getting a design, ordering the materials and installing the system. That story will be told with visual enhancement at the Lafayette Library on Earth Day, April 22nd (www.lllcb.org)

So why do rainharvesting? In my case it was an opportunity to be true to myself while dealing with a necessary repair and solve many of my outside water needs, namely irrigation and pond water replacement, with the best water possible for such purposes. I could reduce my purchase of treated water (treated at great energy expense) for irrigation purposes in a fairly arid region on a good size suburban lot. I would be on a path to water self-reliance.

Given that I did a portion of the labor and directly purchased many of the system components, I determined that the payback period would be about 5 years. But this is not just about economics. It is about protecting the 1% of the earth's water that is available to us for biological purposes, agriculture, recreation, industry, energy and for the other living things with whom we share the planet.

Rainwater harvesting has the benefit of reducing flooding, restoring groundwater supplies, providing the best water for irrigation purposes, and reducing the demand for high-energy treated water. With population expected to grow in California, existing treated water supplies can be spread more broadly for drinking water would not have to be used for irrigation purposes. In addition it preserves water quality in creeks.

When water drains from our streets, parking lots and lawns, dangerous pollutants are picked up reducing water quality. This water runoff also contains toxic waste, bacteria and trash harmful to humans, fish and wildlife. Contra Costa Clean Water Program

I have written this article from the perspective of a homeowner trying to make lemonade from lemons. Sometimes there are serendipitous results when one is open to change. Who would have thought that dealing with a broken gutter would have led me to a whole new

way of thinking about water and be able to offer public policy recommendations to our district's state senator.

Imagine the energy savings if there were tax incentives or rebates for reducing our use of treated water as there have been for solar energy installations.

What if we did as Joel Salatin has suggested in his new book with an eye to making every home water self-sufficient and preserving our precious water:

1) encourage water barrels, 2) give 100% tax credits for rerouting plumbing to take graywater into flush toilets 3) no recreational water from public sources 4) alternative toilets 5) encourage farm ponds

We would be making a huge difference in protecting fresh water supplies, healthy fish populations, and meeting drinking water requirements for a growing population. Think, too, of the green jobs that would be created in a state desperate for tax revenue and of the community enhancement that could take place as well.

Rainharvesting is not rocket science. It is fairly low cost and uses simple, readily available materials. Sites vary. Storage tanks vary in size, color and shape and some are even collapsible to accommodate available spaces and topography. We are, quite simply, coupling ancient technological ideas with modern equipment. The technique need not, in fact, should not, be applied only to residences.

Those of us residing in Contra Costa County have received ballots to be returned by April 6th for the 2012 Clean Water Initiative. The stated goals of the Contra Costa Clean Water Program are as follows:

- Protect sources of clean drinking water from contamination and pollution
- Keep trash and pollution out of local lakes, creeks, rivers, the Delta and Bay
- Prevent illegal or toxic discharges of pollution into water and last but not least
- Catch, treat and use rainwater
- Harvest and use rainwater for landscape irrigation, to conserve clean drinking water and to eliminate pollutant discharges.

Rainharvesting is not a panacea and may not work for everybody. There are other low cost solutions for reducing our impact on precious freshwater supplies outside of our homes. Consider incorporating a raingarden in your landscape. Install a waterbar in your driveway or use pervious pavers when renovating your patio.

My system has given me water security for the extensive garden that sustains me. There was an additional benefit in that the entire effort also became a community engaging activity. We all have to start the process somewhere.

In the words of author, Oberlin College professor and Bioneer, David Orr

It makes better sense to reshape ourselves to fit a finite planet than to attempt to reshape the planet to fit our infinite wants.

Judy Adler is a Contra Costa County environmental educator and sustainable gardener.

Visit www.diablonature.com for information about her field trips for school groups and other activities. To learn more about her rainharvesting system go to www.lllcf.org

Watershed Friendly Project:
Low maintenance, aesthetically garden - beneficial to wildlife and solely with rainwater, which plants prefer.
Addresses the need for precious municipal supplies from Lagunitas and Nicasio by using stored rainwater.
Prevents rainwater from spreading and sinking into the ground rather than sending it to storm drains where it contributes to flooding, erosion and pollution of Corte Madera Creek.
Provides an easily replicable model for water conservation that benefits you, your neighbors downstream, and Marin's aquatic wildlife.

KEY ACTION - Help your community & watershed. Conserve water!
Every inch of rain on a 1,000 square foot impervious surface (i.e., a roof, driveway, or parking lot) produces 60 gallons of stormwater run-off. With an annual average of 44 inches per year in Ross, that amounts to 26,400 gallons! Connect with local experts and resources to implement rainwater harvesting on your property.

Every Drop Counts!
One inch of rain on this 230 square foot roof produces 143 gallons of run-off! With an annual average of 44 inches in Ross, that translates to over 6,200 gallons per year! Enough to meet all the water needs of an average person for 2 full months!

Cistern
Rainwater collected from just half of the roof will fill this 2,500 gallon cistern in less than a full season, and be stored until it is needed in drier months.

Shed roof used for rain collection

Stored rainwater, and overflow from the cistern, will irrigate the basin-and-berm rain garden nearby to help establish native and low water use plantings, and moisten the compost piles used to mulch and fertilize planting beds throughout the grounds, so people and wildlife can enjoy a happy, healthy garden.

Rainwater for basin-and-berm rain garden

Project made possible by the 10,000 Rain Gardens Project, a partnership between MMWD and SPAWN.
Special thanks to Marin Art & Garden Center, the Marin Master Gardeners, Drake High School Mobius students, and Clean Water Components.
To learn more about rainwater harvesting, visit the 10,000 Rain Gardens Project: www.SpawnUSA.org/Water.