



# RUSSIAN RIVER WATERSHED ASSOCIATION

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## RRWA Environmental Column – December 2010

### Rainwater Harvesting

With the onset of winter rains, it may have occurred to you that it would be a good time to clean and maintain your roof gutters and downspouts. Once you have ensured that rainwater drains efficiently off your roof, you should also consider what happens to the water at the end of your downspout. For the sake of your home, make sure that water does not pond near the foundation. For the sake of the environment, try to prevent the water from gushing down your driveway or otherwise making its way off your property. If not retained on-site, runoff from roofs and other portions of private property will generally end up in the nearest creek or waterway (sometimes via a storm drain system). Too much water entering creeks during a rain storm can cause flooding or streambank erosion.

Instead of allowing your roof runoff to flow off your property, you can “harvest” the rainwater that flows off your roof. One method of harvesting rainwater is simply to direct your downspouts to vegetated areas of your property. It helps if these areas have well-drained soils. Deep rooted plants, such as most trees, will be able to access the water in the soils for many weeks after the storm has passed.

You can also harvest the rainwater by placing a rain barrel or cistern at the end of you downspout and later use the collected water for landscape irrigation. There are a number of benefits to harvesting rainwater for landscape irrigation:

- By harvesting rainwater, homeowners can conserve potable water and reduce their utility bills.
- The water is free – although the rainwater harvesting system is not. Some local governments, such as the City of Santa Rosa, provide rebates for rainwater harvesting systems. Check with your local government for more information about potential rebates.
- Plants thrive on rainwater.
- Rainwater harvesting reduces flow to stormwater collection systems and creeks, alleviating flooding and streambank erosion.

One inch of rainfall over one square foot of water calculates to 0.62 gallons of water. Due to water loss from evaporation, splash-out, and overshoot from gutters, the typical “collection efficiency” of a rainwater harvesting system is between 75 and 85 percent. As such, a rainwater harvesting system for a 2,000 square foot roof would collect approximately 1,000 gallons of water for each inch of rainfall.

Collecting the full amount of roof runoff requires a fairly large and sophisticated system but collecting even small quantities (for example, 50 gallon barrels at each downspout) can be beneficial. For further thoughts on what size rainwater water harvesting system might best suit your needs and other design considerations, consult your local government or look for resources on the internet or at your local library. One local reference is the “Slow It, Spread It, Sink It” guide developed by the Southern Sonoma Resource Conservation District available at <http://www.ssrcrd.org/rainwater.php>. For all rainwater barrels and cisterns, it is important to ensure that small children cannot climb in and that the opening at the top is screened to prevent mosquitoes or other insects from breeding in the collected water.

California has no statewide regulations in place specifically related to rainwater harvesting although some local governments have developed regulations or guidelines. The County of Sonoma currently allows the use of rainwater harvesting for outdoor irrigation use and certain other outdoor wash uses but does not allow the plumbing of rainwater into a building for drinking water, shower water, use in toilets, etc. Permits are generally



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not required for simple rainwater harvesting systems. Permits may be required for larger or more complex systems. For example, in Sonoma County, a permit would be required for storage tanks larger than 5,000 gallons. Check with your city and/or county for advice on what regulations currently apply.

To see a working rainwater harvesting system, stop by the south parking of the Sonoma County Permit and Resource Management Department (2550 Ventura Ave., Santa Rosa near the Steel Lane exit from US Highway 101). -



*This article was authored by Reg Cullen and James Johnson of the Sonoma County Permit and Resource Management Department (PRMD) on behalf of RRWA. RRWA ([www.rrwatershed.org](http://www.rrwatershed.org)) is an association of local public agencies in the Russian River Watershed that have come together to coordinate regional programs for clean water, fisheries restoration, and watershed enhancement.*