RAIN HARVESTING

Jesse Locks, Nevada County Master Gardner

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Water is scarce! But essential for our existence and supplies are increasingly coming under pressure. Only 3% of the world's water is fresh and less than a third of 1% of this is available to humans. We may not have power over the rain gods to bring us more storms, but we can manage how we use our water, especially in our gardens, and we can also harvest the rain we do receive.

Gardens and/or landscapes top the list as the main use of water at an average home, followed by toilets, showers, laundry and dishes. Even more distressing is the fact that residential properties are regularly over-watered by 30% to 40%.

The first step in conserving water in your garden is to become "water-wise." Being water-wise will also save money, time, effort, and create healthier gardens.

General Principles for Watering

1. Plants need less water in cool weather than during heat spells. The wind has just as large of an impact in drying out plants and soil as the heat.
2. New landscaping needs more frequent watering than established gardens.
3. Gardeners should frequently check the actual conditions of their plants and water accordingly.
4. You can simplify your irrigation by planting plants with like- water needs together. A planning technique referred to as "hydrozoning."
5. Water deeply and infrequently. Deep watering of 6-24" encourages plants to root more deeply. Shallow and too-frequent watering results in water evaporation.
6. Apply water uniformly. Water applied evenly to plants wastes less water and improves the health of your plant.
7. Determine when your plant needs water. Use the quick and easy "feel" test of digging down 6-8" in the garden and take a handful of soil and squeeze it. If it oozes, it's too wet. If it won't hold together, it is too dry. If it holds together in a crumbly moist ball, it's just perfect.
8. Use mulch to conserve water. A decorative bark, gravel, redwood sawdust, or peat moss spread 2-6" (depending on the material) inhibits water evaporation.

Now that we know how best to use water in our gardens, we can learn how to actually ***harvest*** the rain. Harvested rainwater is rainwater that is captured from the roofs of buildings on a residential property where it is then directed either into the soil or into a cistern or tank, giving you the option of applying supplemental irrigation in dry times.

By harvesting rainwater in the land or in cisterns you will decrease erosion, reduce flooding, minimize water pollution and prevent mosquito breeding. Rainwater is also good for your plants.
Most importantly, rain harvesting saves water. People who collect and use their own rainwater are more aware of their water use.

Simple Steps of Rain harvesting

1. Begin by observing your property. Are there green areas where moisture naturally collects? Are there bare spots in other places? Is there running water?

2. Start at the top or the high point of your property and work your way down. Consider run off. When more rain falls than can be absorbed into the soil, water pools form. Our goal is to create "nets" across your landscape to direct this water into the soil by spreading and sinking its flow.
3. Make water stroll, not run through your landscape. Always plan for overflow and treat it as a resource. Building overflow spillways that are stabilized with packed rock or well-rooted vegetation will hold up to large flows. Overflow from tanks or cisterns should be directed away from the tank's foundation.
4. Maximize living and organic groundcovers. Bare dirt is prone to compaction and reduces the ability for water to infiltrate below the surface. Just by covering dirt with something like mulch or even better yet, natural vegetation that is best adapted to local rainfall patterns will increase infiltration.
5. Now make a site plan from your observations. This will help you see and make use of your sites resources and challenges.
6. Calculate your site's rainfall volume.
7. Estimate your site's water needs. Using your water bill is a good start. Compare your needs to the volume of rainfall flowing through your site.

Harvesting Water with Tanks or Earthworks

Your highest quality rainwater runoff comes from clean roof materials such as metal, slate, or tile. Rain gutters capture it; from a downspout, it can be directed into a cistern or rain barrel to later be used in vegetable gardens.

Cisterns and rain barrels can be purchased at home and garden stores or online and usually have an intake line, spigot, overflow attachment, screen cover to keep leaves out and a removable solid cover. Water then travels through a gravity-fed drip system in the cistern and gives you the option of applying supplemental irrigation in dry times. Storm water from dirtier surfaces like earth slopes, streets or sidewalks should be directed to trees and shrubs.

A variety of earthworks can be implemented directly into your landscape to harvest the rain.

The **berm n' basin method** is literally a berm built perpendicular to the land slope and designed to intercept rainwater from running down.

A **French Drain** will intercept rainwater into a trench or basin filled with porous materials. It should be used on a flat to gentle slope. Drains are best used where subsurface irrigation of landscapes is needed. French Drains should only harvest runoff water that is sediment free, such as from a roof gutter.

An **infiltration basin** is a landscaped level-bottomed, shallow depression dug into the earth that intercepts and infiltrates rainfall and runoff in the planting basin it creates. This works best in flat landscapes.

A **diversion swale** is a gradually sloping drainage way that slowly moves water from one point to another. It allows a portion of water to soak into the soil locally while moving surplus water slowly downhill from one place to another, infiltrating water all along the way. A diversion swale is most effective in intercepting and redirecting fast moving sheet flow and channelized water.

These are just a few ways that water can be effectively collected and used in your landscape. Combine these water conserving methods with planting plants and trees that are either native or appropriate for your area and climate and you have a win-win situation for you, your garden, your community and the environment.

References

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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

PLACER COUNTY
11477 E Avenue
Auburn, CA 95603
(530) 889-7385
E-Mail: ceplacer@ucdavis.edu

NEVADA COUNTY
255 So Auburn
Grass Valley, CA 95945
(530) 273-4563
E-Mail: cenevada@ucdavis.edu