

Rainwater Harvesting and Use

The practice of collecting rainwater to be used in irrigation has gained a great deal of attention in recent years. Interest in rainwater harvesting can be motivated by the need to have supplemental water available or by the need to control the runoff that occurs after a significant rainstorm. In either case, rainwater can be collected in a cistern or basin, and then you can use that water as a water source for an irrigation system.

Understanding Local Statutes

Before you begin planning a rainwater harvesting system in the United States, make sure you understand the current statutes that apply. Some states, such as Colorado, had laws ruling that precipitation belonged to the holders of existing water rights. Under these laws, rainwater could not be captured and must be allowed to flow freely to its natural drainage. In response to increased interest in rainwater harvesting, the Colorado Water Conservation Board and Douglas County found in a 2007 study that only 3 percent of rainwater actually reached a stream or the ground water. As a result, Colorado revised their legislation to allow certain types of well owners to collect rainwater and to authorize pilot rainwater harvesting projects.

Other states encourage rainwater harvesting and offer incentives for setting up these systems.

Refer to State Rainwater Harvesting Statutes, Programs, and Legislation page on the National Conference of State Legislature's web site.

<http://www.ncsl.org/issues-research/env-res/rainwater-harvesting.aspx>

Designing the System

Rainwater harvesting systems can be simple or complex depending on whether you are collecting water from rooftop runoff or from a parking lot. When rooftop runoff is collected in a cistern and used for irrigation, you need a simple filtration system that removes leaves and debris before the water is routed into the cistern. On the other hand, rainwater that runs off a parking lot or other hard surface may be contaminated with oil, solvents, salts, and other toxins. This water requires more extensive filtration before it can be used for irrigation.

Rainwater harvesting doesn't provide a completely dependable source of irrigation water because it is dependent on the weather, and weather is not dependable. To get the maximum benefit from rainwater harvesting, you should plan for storage in your water harvesting system. Make sure that your cistern is accurately sized for the amount of rainwater that you can collect and store.

Keep in mind: 1 inch of rainfall on a 2,000 sq. ft. roof equals approximately 1,250 gallons of water.

Using Rainwater for Irrigation

When your rainwater cistern is in place, you can connect it to your irrigation system as a water source. Depending on the quantity of rainwater that is stored and the frequency at which it is replenished, you will probably need to monitor the quantity of water in the cistern to ensure that it doesn't go dry during a watering cycle. With Baseline irrigation controllers and monitoring devices such as a biSensor moisture sensor or a float switch and an event biCoder, you can configure the system to monitor the water level and automatically shut down watering or switch to a different water source when the water level in your cistern gets to a designated low level. Use the documents that are referenced in [Baseline Solutions for Irrigating from a Pond or Cistern](#) to set up your system.

After your system is operating, it is a good idea to monitor your landscape water use. If you have installed water harvesting cisterns in an existing landscape, use last year's water bills to compare your pre-water harvesting use to your post-water harvesting use. Every time you irrigate with harvested rainwater there is a water savings!