

Rainwater Harvesting

Rainwater harvesting is the principle of collecting and using precipitation from a catchments surface by gathering and storing rainwater. Traditionally, rainwater harvesting has been practiced in arid and semi-arid areas, and has provided drinking water, domestic water, water for livestock, water for small irrigation and a way to replenish ground water levels. Even with the minimal rain we receive in Arizona, we can redirect hundreds or thousands of gallons of rainwater from our roof surfaces into designated areas.



This photo to the left is of a 500 gallon cistern used to store rainwater and distributed through garden hoses through a gravity-fed system. By installing rain gutters around the perimeter of your roof, you can direct and store enough water to sustain your yard for months at a time.

Even a typical 2,000 square foot roof area in Arizona can capture up to 17,000 to 20,000 gallons of water per year!

Rainwater collection from roofs can be calculated using the following formulas:

1" of rain on a 1,000 square feet roof yields 623 gallons of water

1 cubic foot equals (12" by 12" by 12" cube) equals 7.48 gallons

1 millimeter of rain on a 1 square meter surface yields 1 litre of water.



Rainwater tanks are installed to make use of rain water for later use, reduce mains water use for economic or environmental reasons, and aid self-sufficiency.

Many homes use small scale rain barrels to harvest minute quantities of water for landscaping/gardening and be quite inexpensive when made from standard 50-gallon barrels or trash cans, and can be properly engineered to screen out mosquitoes and debris.

Rainwater harvesting in urban areas can have tremendous benefits such as reducing your water bill and usage of chemically-treated city water, increasing soil moisture levels for urban greenery, as well as improving the quality of groundwater in our yards and communities. At a household level, harvested rainwater can be used for numerous applications from controlled irrigation to cleaning, washing cars, bathing and even drinking when properly filtered.

Traditionally rain water has been one of the few water sources known to usually be clean and safe to drink. Today water harvesters must be wary of pesticide contamination, high mineral levels, bacteria and other impurities in their runoff water. Filtering technologies have been used in the past and today to purify it by passing it through a series of rocks, gravels, and sands to scrub out contaminants. These methods have proven to be very effective.

As rainwater may be contaminated, it is often not considered suitable for drinking without suitable treatment. Open containers should be immediately diverted into gardens or orchard areas to prevent from being a breeding ground for mosquitos and bacteria.



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