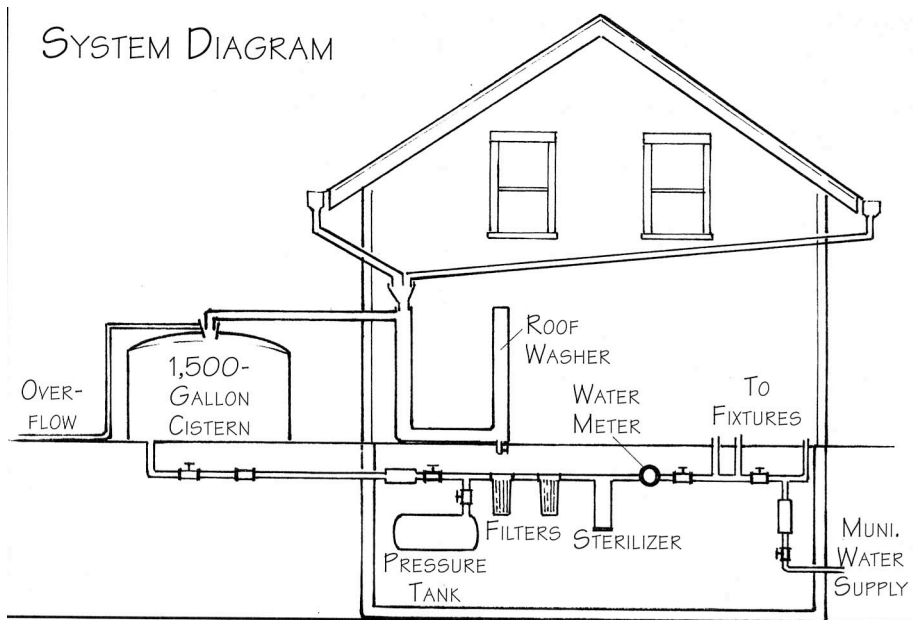


Rainwater Harvesting: The Collection of Rainfall and Runoff in Rural Areas. [Arnold Pacey](#), [Adrian Cullis](#) Great book, designed for third world applications

http://www.BirdCrossStitch.com/Family_Focus/Rainwater_Collection.html - Lots of great rainwater links.



Rainwater is an abundant, high quality, and versatile water supply. See www.solarfarm.com for photos of local systems, references, and further information on rainwater collecting.

Resources

Rainwater Collection Over Texas Sales, service, systems and supplies. 201 Thurman Road San Marcos, TX 78666 Tel: 800-222-3614
www.rainco.net

<http://www.rainwatercollection.com> - Rainwater collection for the mechanically challenged, book and video.

<http://www.uoregon.edu/~hof/S01havestingrain/index.html> - University of Oregon rainwater info.

Texas Guide to Rainwater Collection – an excellent and free publication. www.twdb.state.tx.us/publications/reports/RainHarv.pdf

Eco-nomic Security for Spaceship Earth – Jim Bell Excellent book by San Diego environmental designer and mayoral candidate Jim Bell. It details how even San Diego could be water self sufficient with the wise use of rainwater.

Water gushes off, causing erosion and becoming a waste product rather than a resource. Design your yard to store and hold water in the ground.

Porous paving systems can be used to create invisible lakes under parking lots, storing millions of gallons of water under a typical grocery store parking lot.

Treating rainwater – for most uses, it is not necessary to do any treatment for rainwater. For drinking you can use silver impregnated ceramic filters like the ones manufactured by the British Berkefeld. You can also use solar distillation or pasteurization, sand filters, reverse osmosis, ozonation, UV light and wetland/living machine systems.

Using rainwater – Rainwater is great for showering and bathing. Plants like rainwater better than water company water, which has chlorine and other biocides added. You can use untreated water to flush your toilet or wash your car. There are technologies that can help you use water wisely and reduce your consumption by 50-75% while still getting the same or better services from water. Some of these include drip irrigation, low flow toilets (almost all toilets are low flow these days), appropriate landscaping, and high tech shower heads that give the same tingly shower with much less water. Horizontal axis washing machines use 1/3 the water and 1/2 the energy and get your clothes cleaner. Electric companies will often give you a rebate for buying a horizontal axis washer.

The diagram below shows a typical home rainwater system.

Collecting rainwater: The higher your rainwater collection area, the better, because you can use gravity to distribute water rather than pumps. Gravity works 24 hours a day seven days a week and never fails. Roof and garage areas work well and often already have gutters. You can also collect rain off other hard surfaces like driveways (even gravel driveways are quite impervious to water) and roads. You can collect water by building shallow ditches on contour (called swales) or with a slight slope that lead water to storage areas (ponds and wetlands, for example). You can use existing ditches to collect water. You can collect water from dew and condensation. Roof collection systems are often equipped with roof washers, which automatically discard the first few gallons of rainwater each time it rains..

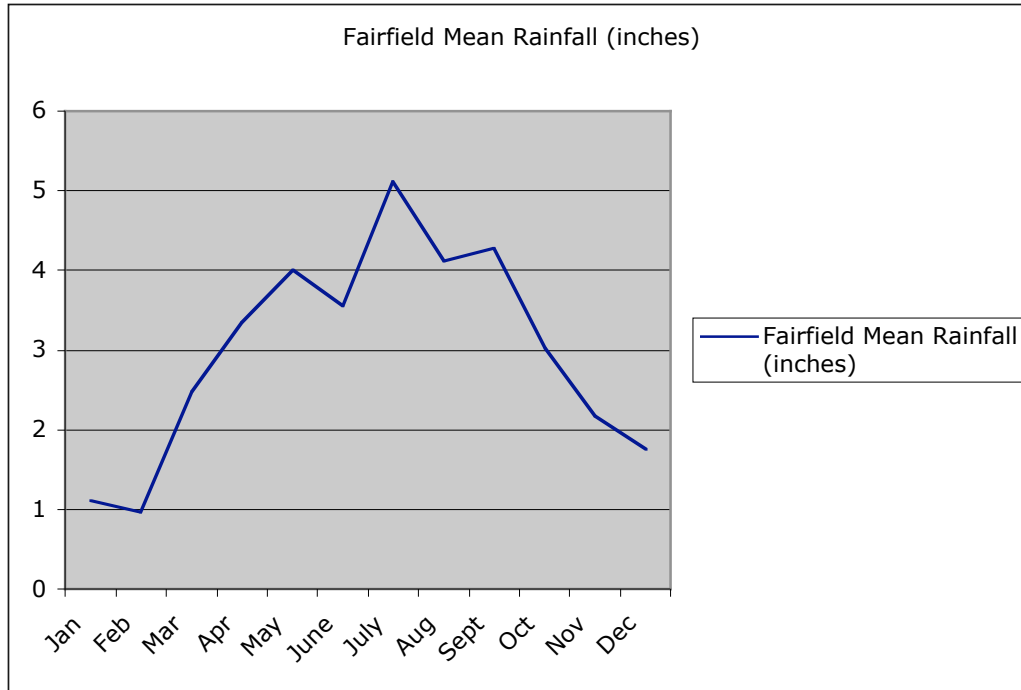
Storing Rainwater: Rainwater can be stored in barrels (Food grade plastic 55 gallon barrels are available from the Kalona cheese factory – last time I checked they were \$5.00). You can connect a hose to a barrel with a male-garden-hose to 3/4-inch male-pipe -thread adapter (about \$3.00 at most hardware stores). Find a wood spade bit the same size or just a little smaller than the 3/4 inch male thread, and use it to drill a hole near the bottom of the barrel. Screw the 3/4 inch pipe thread end of the adapter into the hole in the barrel (the metal adapter will cut threads into the plastic barrel), and apply silicone caulking liberally to the inside and outside. For less than \$10.00 you can get 55 gallons of storage, and barrels can be connected to get larger amounts of storage. If your barrel is higher than your garden, you can use gravity to deliver the water. Even a few feet above your garden is enough to run most drip irrigation on gravity. Keep the tank screened or add a few goldfish to eat mosquito larvae

A wide range of reasonable priced water storage containers up to 1500 gallons are available at farm supply stores (TSC, Orschelin).

Rainwater can also be stored in ponds (for around \$500 you can have a pond dug that will store hundreds of thousands of gallons of water) In a few hours you can hand dig a pond that will store thousands of gallons of water, and our heavy clay soils mean that you often don't need a liner.

Concrete tanks are excellent for storing water. Precast tanks of up to 1500 gallons are locally made (Fairfield Precast) and are available for less than 50 cents per gallon. My tank is 10,000 gallons and cost very little because it was built as part of my basement. To insure an adequate water supply for a typical family of four, I recommend at least 8,000 gallons for a whole house system.

Millions of gallons of water per acre can be stored in the roots of prairie plants. Prairie can absorb and store heavy rain and release it slowly, minimizing or eliminating erosion. In contrast, many landscapes cannot absorb heavy rain.



In contrast, a place like San Diego gets only 10 inches of rain a year and it sometimes doesn't rain at all for 6 months. However, even San Diego could supply its water needs from rainwater.

A home with a 40x40 footprint (1600 square feet) gets 35,000 gallons per year, almost 100 gallons per day. The total amount of rainwater delivered is astounding - The City of Fairfield gets 3 billion gallons for a population of 10,000 (218,000 gallons per person) and Jefferson County gets 264 trillion gallons for a population of 16,000 (. 16 million gallons per person). Of course, we share water with lots of other life forms, but there is plenty for our needs if we use it wisely. Most of the water that hits the surfaces of buildings, roads and parking lots goes unused. Unused, it becomes a waste product that we have to pay to get rid of. In contrast, many parts of the world require rainwater collection systems. Rainwater collection can eliminate the need for costly central water systems that mine water from deep in the ground. Rainwater collection systems can also eliminate costly systems that get rid of waste water. Abundance Ecovillage, a new housing project in Fairfield, is designed to use rainwater to supply 100% of the needs of 30 homes, a vegetable farm, and a nursery (www.abundance-ecovillage.com).

My neighbors and I have been using rainwater for all our water needs for over 10 years. It is not necessary to have potable water for most uses. Do you really need drinking water to flush your toilet, for example? We need only a few gallons of potable water a day. Here are some things you can do to collect, store, purify and use rainwater:

Living Wisely and Well

Collecting and Using Rainwater

According to a recent UN report, the next century's wars will not be about oil, but about water. Fortunately, in Southeast Iowa we are blessed with abundant rainfall distributed throughout the year. This article will discuss collecting and using rainwater. Rainwater is naturally purified and distilled by the sun. The Earth's systems that purify and distribute water as rain are a marvel of nature's engineering – It takes roughly 100 times more energy than mankind uses to operate these system, they are 100% solar powered, and provide service free of charge. The systems have operated for billions of years without human intervention. All water that people use was once rainwater. We are interconnected to all the waters of the earth by these systems - the cup of tea you drink almost certainly has molecules that were once in Cleopatra's bathwater.

In Southeast Iowa, we get about 35 inches of rain per year on average, fairly evenly distributed through the year (although we get more rain in the summer than in the winter).

Month	Mean
Jan	1.12
Feb	0.96
Mar	2.48
Apr	3.35
May	4.01
June	3.56
July	5.12
Aug	4.12
Sept	4.27
Oct	3.02
Nov	2.18
Dec	1.76
Total	35.95