

## WHERE'S OUR WATER VIDEO PART 2 TRANSCRIPT

Brought to you by the Asombro Institute for Science Education with support from the USDA Southwest Climate Hub.

Drought is not a new challenge in the southwest, and people have been finding ways to conserve water here for thousands of years. We'll show you some of those methods and then it'll be your turn to design your own water conservation system. Have you ever seen a circle around a tree like this? This is an example of land contouring - when people shape the land so that rainwater flows to where plants can use it. The dirt wall around the tree creates a bowl so water collects around the tree's roots where it needs it the most.

Terrace farming is also a form of land contouring. When it rains on a hill, water tends to run down the hill without being absorbed by the plants. In terrace farming, people shape the land by cutting steps into the side of a slope and planting crops on top of them. When it rains, the steps slow down the water so it gets absorbed by plants and reduces soil erosion.

The Zuni people in New Mexico and Arizona used a form of land contouring here in the southwest. Waffle gardens are gardens with berms or raised dirt mounds around them to hold water. The Zuni people made waffle gardens a thousand years ago and the methods are still used today. Ancestral Puebloans would make waffle gardens at the base of a cliff or mesa to catch the rain that came off of it.

Another method of water conservation is rooftop rainwater harvesting systems. Rooftop rainwater harvesting is simply a way of collecting rain that falls on a rooftop so people can use it later. Acoma Pueblo in New Mexico is the oldest continually inhabited community in North America. The people of Acoma have been collecting rain that falls on rooftops or impermeable surfaces like rock for hundreds of years. They channel the rain that falls on their buildings into natural stone cisterns like this rock pool, to be used later for building and cleaning.

Today, people use gutters and barrels to collect water off of rooftops, like this model house where rain on the roof is directed to a holding container by the gutters.

Let's check out an example that can be found at the Chihuahuan Desert Nature Park in Las Cruces, New Mexico. Our rainwater harvesting system is made up of the roof, the gutter, and the rain barrel. Rain falls on the roof and flows downslope to a gutter. This gutter directs all the rain towards a barrel, where it can be stored and used later. It's not clean enough to drink, but it can be used to water plants, mix concrete, or clean. Pretty simple and effective. I hear what you're saying. That's nice, but it's a small roof. Could it really collect that much water? Let's do the math. We get about 10 inches of rain in New Mexico per year. This roof is 96 inches by 168 inches.  $96 \times 168 \times 10$  is 161,280 inches cubed or about 700 gallons. You use about 50 gallons during a 10-minute shower. If you took a 10-minute shower every day, it would take you two weeks to use that much water, and that's just from this one little roof. Imagine if this was the roof of your home, or your school.

We just showed you several examples of water conservation systems that have been used by people for thousands of years. Now it's your turn to design and test your own water conservation system.