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SAVE WATER, SAVE YOUR FUTURE



SPLASH TO THE
FUTURE
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The Big Problem

Water scarcity is becoming a bigger issue for our communities and future generations each and every day. With the lack of action toward water conservation, the Texas Panhandle and surrounding areas are finding it necessary to anticipate a water shortage sooner than expected. The Ogallala Aquifer¹, which is the main source of water for the agricultural, industrial, and residential population in a large part of the Great Plains, is beginning to dry up due to water being pumped faster than rainfall can replenish it.

All About The Aquifer

The Ogallala Aquifer has been a declining source of water for decades and recently lost approximately 10.7 million acre-feet of reserve from 2013 and 2015 alone. It is predicted that the aquifer will contain 2,606,964 acre-feet of reserve in



2020. There are multiple human demands for water; however, not even the precipitation and river systems can keep up. The average water depletion over the past six years has been doubled as compared to the previous 60 years. While many states are experiencing problems due to the Ogallala Aquifer running out, the heart of the aquifer² is at the greatest risk of depletion. According to projections, four counties in the surrounding areas of Amarillo and Lubbock are

¹ One of the largest aquifers in the world, measuring approximately 174,00 square miles.

² The Texas Panhandle, north 450 miles from Lubbock to the Kansas-Nebraska state line.

expecting to be depleted of groundwater in as soon as 15 years. Another issue impacting depletion is the predicted population increase in Texas to 46.3 million by 2060. With the growth of population comes an increasing demand for water. Unfortunately, scientists are calculating that the aquifer will not naturally replenish for another 6000 years.

The quantity of recharge the aquifer reaches depends on multiple factors, such as the amount of precipitation, soil type and vegetational cover. Due to the aquifer's decline in water, scientists predict that there will be increasing impacts of climate change, such as warmer days and more frequent droughts. The Panhandle is a semiarid climate and has already been hit extremely hard with drought, depleting the water accumulated in the aquifer.

Wasting Water

There are several major ways people are wasting water in our society today, one of which is excessive and improper watering of plants and yards. Another is using water for unnecessary tasks such as hosing off concrete. People who have leaky plumbing or a drippy faucet, or who leave water on in their



household when they are not using it, like when showering, brushing their teeth or doing the dishes, is also a major problem. These examples, along with the lack of conservation plans throughout Texas communities, are proving to speed up the diminution of our water source.

Simple Solutions

Though many factors diminish the source of water in the aquifer, there are plenty of preventative measures that aid in preserving this water, many of which are simple solutions. Remedies such as people turning off the water while brushing their teeth, and properly loading the dishwasher and washing machine can prove to be effective. Repurposing water that would have previously been thrown away, such as in unfinished water bottles, is another simple way to conserve.

When to Water

Many people squander water while watering their yard with sprinklers due to watering mid-day when temperatures are highest and evaporation is largest. Other factors in which one can lose water while



irrigating their yard include water being blown away by the wind, running off the surface which is being watered, and evaporating on the surface before soaking in. Home sprinklers can lose up to 25-50% of water due to these circumstances.

To reduce evaporation of water it is best to irrigate whenever the air is cool and the relative humidity is high. Watering in the morning can save as much as five to ten times more water than irrigating mid-day. Another problem when it comes to watering yards and plants is wind. Wind can cause the water droplets to drift away from the surface which is being watered. Strong winds can have an immense outcome on absorption while watering a yard, especially if the sprinkler

has a misting effect. Solutions to this problem are watering yards when winds are low and using a multi-stream sprinkler. These kinds of conservation minded actions would take steps to insure that there is minimum runoff when watering a surface.

Soil Sensors

Soil moisture sensors are yet another way to save water. Soil sensors conserve water by measuring the amount of moisture located in plants' active root zones. This sensor aids in ensuring that the correct amount



of water is added at the proper time. A study conducted by the EPA shows that the American households waste up to 900 billion gallons of water annually nationwide for outdoor functions, most of which is landscape maintenance.

Researchers express that with the serviceability of soil moisture sensors, water loss can be decreased by 20% to 25%, or even greater.

This shows that soil moisture sensors can have a reduction on outdoor water consumption by 1.8 to 2.25 billion gallons each year.



Artificial Turf and Xeriscaping

A healthy grass lawn commonly requires 20 gallons of water per square



foot per year, accumulating to 1.28 million gallons of water for an average size yard over the course of ten years. Replacing a live grass yard with artificial turf is

proving to become a popular choice to conserve water. Having a yard with artificial grass saves an abundance of water. Xeriscaping is also a form of water conservation that is on the rise among those who would still like to garden, but with minimal water usage. Some local water departments will even cover a portion or all of the cost to xeriscape a yard.

Enforcing Water Conservation

Another solution that could prove very effective toward conserving water to its fullest potential is setting up community ruled systems and rules about water usage. These systems, which can be set up by local water departments, can prove to be cost efficient, conservative and, above all else, can stretch the life of our aquifer. These can entail rules that are set forth about what times of the day yards can be watered, along with making sure there is no runoff or wasted water. If a household does not obey these rules, fines can be enforced. These systems bring the suggestion of water conservation into action and have immediate effects on water that is wasted and overused.

Leaks

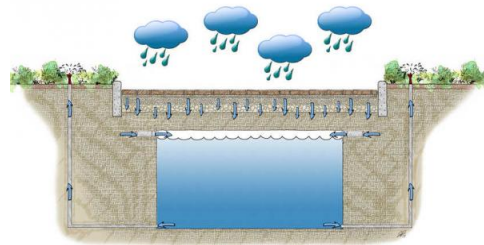
A common problem concerning water waste within a household is leaks. Leaks found inside of households nationwide squander more than one trillion gallons of water annually, and ten percent of homes have leaks that waste 90 gallons or more per day. An easy fix for this frequent problem is to check for leaks regularly. Common types of leaks that are found in the home are toilets, faucets, showers and water supply lines. Just by



repairing those leaks in the average domiciliary, one can save up to 10,000 gallons of water, or more, every year. Additionally, fixing household leaks can save homeowners approximately 10 percent on their water bills.

Rainwater

Catching rainwater is a major way to save water. This can mean doing something as simple as using buckets to catch rainwater off of a person's roof. It can then be repurposed for things such as watering plants, car washing, or putting in a pet's water bowl. On a bigger scale, catching rainwater can be done with a more extensive rainwater conservation system.



FirstBank Southwest in Amarillo, Texas, has incorporated a rainwater harvesting system at their Western Banking Center. The system collects rainwater from the roof of the building, as well as what falls to the ground, which soaks into permeable paving, thus filtering it with aggregate rock and depositing what is collected into underground holding



spaces. From there, the water is repurposed to supplement the bank's xeriscaping. By doing this, they have lowered their bills, which will prove to pay off the investment. Through this green tech, in only a year, the bank conserved 90,000 gallons of water and projections reveal that in a year with normal rainfall, close to 180,000 gallons of water will be captured. If systems like this were to be placed in communities around the Panhandle, there

would be a big change in water bills, water usage, and it could extend the expected lifetime of our aquifer.

Greywater

Greywater is an innovative way to reuse water by collecting the water that drains from washing machines, showers, bathtubs and sinks. The water that is collected from these devices is then piped to the outside of the house, which goes to water your yard. Unlike rainwater, greywater can irrigate a yard year-round. The EPA says that the average American family of four produces about 200



gallons of greywater inside the house each day. As co-founder of Greywater Action for a Sustainable Water Culture, Lauren Allen said, “It’s a great way to save water. You’ve already paid for it once and you get to use it again.”

Save Water, Save Your Future

Even though there is no doubt that the water in the Ogallala Aquifer will continue to decline, there is so much that can be done to slow it down. With a combination of simple and larger scale ways to conserve and eliminate the waste of water, our future can thrive on the Ogallala Aquifer much longer than many are predicting. Remember, when you save water, you are saving your future.

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