

# Water Conservation Series: Home, Yard, Farm & Ranch

## Hydrogeology of New Mexico

*Stacy Timmons, Associate Director for Hydrogeology Programs*

*NM Bureau of Geology & Mineral Resources*

*New Mexico Institute of Mining & Technology*

*575-835-6951*

*Stacy.Timmons@nmt.edu*



## Water Conservation in the Home

*Susann Mikkelson, Family & Consumer Science Extension Agent*

*NMSU Quay County Cooperative Extension Service*

*575-461-0562*

*susannm@nmsu.edu*

## Host

*Suzanne DeVos-Cole, County Director*

*Agricultural Extension Agent*

*NMSU Mora County Cooperative*

*Extension Service*

*575-387-2856*

*sdcol364@nmsu.edu*



**May 20: Water Conservation  
in the Home**

# Water Conservation Series: Home, Yard, Farm & Ranch

## Household Water Use

The average household in the US uses more than 300 gallons of water per day (or about 100 gallons per person). An estimated 70% of that is indoor usage.\*

Where does it all go\*\*?

- Toilet Flush: 2 to 6 gallons of water per flush
- Dishwasher: average 20 gallons per run
- Shower: 30 to 50 gallons per shower
- Washing Machine: 40 gallons per average load
- Sink Faucet: 3 gallons per minute
- Small Leak: 170 gallons per day
- Large Leak: 1000 gallons per day

Interesting note: the average European household uses half the amount of water of the average US household.\*

\* <https://takecareoftexas.org/hot-wire/what-uses-most-water-your-home>

\* <https://learn.eartheasy.com/articles/top-5-water-wasters-in-your-home/>

\*\*<https://www.4abc.com/blog/where-is-the-most-water-wasted-in-the-home-you-may-be-surprised>



# Water Conservation Series: Home, Yard, Farm & Ranch

## More on Water Usage and Waste

- Flushing the toilet – toilets account for 25-30 percent of an average home's indoor water consumption. This is exacerbated by:
  - **Inefficient toilets**
  - **Slow leaks**
- Doing laundry – one load of laundry in a conventional top-load washing machine can use up to 54 gallons of water. Added waste includes:
  - **Inefficient washing machine**
  - **Washing small loads**
- Taking a shower or a bath
  - The average shower lasts 8.2 minutes and uses 17.2 gallons of water
  - The average shower head rate of flow is 2.1 gallons per minute (gpm) *for an efficient shower head*, more for an inefficient one
  - A full bathtub requires about 70 gallons of water (according to the EPA)
- Other household appliances, tasks and chores
  - **Pre-washing/washing dishes**
  - **Ice makers**
  - **Leaving faucet running during grooming**
  - **Letting water run to heat up or cool off**
- Household leaks



# Water Conservation Series: Home, Yard, Farm & Ranch

## Why save water?

Climate change and changing weather patterns mean changes to our natural water supply. The science varies on specific statistics, but data shows that our water tables and reservoir levels are falling, globally, and particularly in the western United States.



- A recent report from the US Government Accountability Office (according to a 2017 article\*) revealed that all but 10 states expect water shortages within the next decade.

Water conservation is also energy conservation

- Most energy efficient appliances and practices also conserve electricity and other energy.

It is beneficial to your household budget

- updating appliances and fixtures, repairing leaks and implementing water-saving practices can reap an average of 20 to 70 percent in cost savings.

\*<https://learn.eartheasy.com/articles/top-5-water-wasters-in-your-home/>



# Water Conservation Series: Home, Yard, Farm & Ranch

## Water Saving Ideas, Practices and Tips

### UPGRADE YOUR EQUIPMENT:

Install faucet aerators, low-flow showerheads and toilets with smaller flush tanks.



**RECYCLE WATER:** Water treatment plants and rainwater harvesting systems can recycle water on a large scale. But to recycle water on your own, you can do simple things like using the water in which vegetables have been washed to water plants.



### USE ENERGY-EFFICIENT TECHNOLOGY:

Energy star rated dishwashers and washing machines use less water.



Put faucet aerators on sink faucets.



Take shorter showers — five minutes or less is best.

Turn off sink faucet while scrubbing dishes and pots.




Turn off the water while soaping hands and brushing teeth.



## Diving deeper into saving water: your toilet

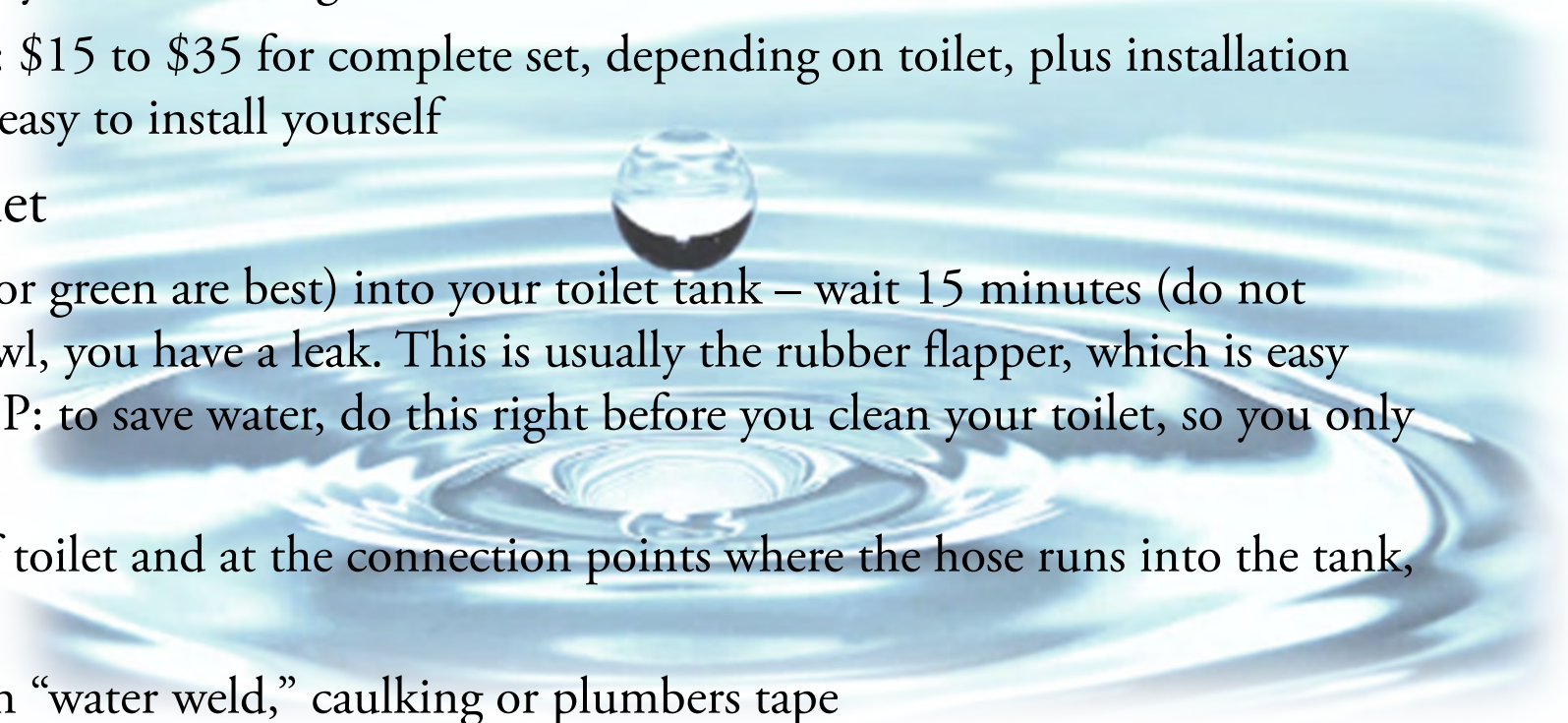
- ✓ Replace those old, water guzzling, leaky toilets
  - Low-flow toilets or toilet with smaller tanks (or both)
  - Average cost: \$80 to \$200 plus installation costs
  - Average savings: up to 75% or up to \$140 per year
- ❖ Penny-wise alternative: insert a quart or gallon jug full of [water, pebbles, coins, etc.] into your toilet tank (you can use a cinderblock or bricks, but these may disintegrate and damage the tank valves)
- ✓ Avoid using your toilet to dispose of trash and household waste
  - Throw spiders and bugs outside
  - Compost items that can be composted
  - Buy a trash bin with a lid if you are concerned about pets getting into tissue, etc.
  - Average cost of compost bins: \$40 to \$400 depending on interests and need
- ❖ Penny-wise alternative: make your own composting bin; here are some resources:
  - <https://www.bhg.com/gardening/yard/compost/diy-compost-bin/>
  - <https://www.wikihow.com/Build-a-Compost-Bin>
  - Average cost of a covered trash bin: \$6 to \$30 depending on interest/need



❖ Penny-wise alternative: make your own covered trash bin using a recycled coffee can, cat litter container or other similar container. You can paint and decorate it any way you wish to add a unique flare to your bathroom décor.

## Diving deeper into saving water: your toilet

- ✓ Replace toilet hardware to stop toilets “running” constantly
  - Make sure your hardware – float valve, flapper, chain and lever all fit your toilet and work efficiently.
  - Check your float valve for debris or clogging, especially in high mineral water systems - this will also make your valve and hardware systems last longer
  - Average cost for new hardware: \$15 to \$35 for complete set, depending on toilet, plus installation costs, although they are pretty easy to install yourself
- ✓ Find and fix leaks in your toilet
  - Drop food coloring (blue, red or green are best) into your toilet tank – wait 15 minutes (do not flush); if dye appears in the bowl, you have a leak. This is usually the rubber flapper, which is easy and inexpensive to replace. (TIP: to save water, do this right before you clean your toilet, so you only flush once!)
  - Check for leaks around base of toilet and at the connection points where the hose runs into the tank, as well.
  - Most leaks can be repaired with “water weld,” caulking or plumbers tape
  - Average cost for supplies: \$6 to \$25



# Water Conservation Series: Home, Yard, Farm & Ranch

## Diving deeper into saving water: your shower/bath

- ✓ Install a low-flow or water-efficient shower head
  - Use varied settings on a shower head to get more pressure without using more water
    - Average cost: \$20 to \$200 plus installation costs
    - Average savings: approximately \$70 per year in water costs
      - This will also reduce water heater use, saving electricity
- ✓ Taking fewer or shorter showers
  - Depending on your lifestyle, you might consider not showering as often, or taking shorter showers
  - For light cleansing, “sponge-bathe” using a sinkful of water instead of filling a tub or running the shower
- ✓ Save and recycle water
  - Keep a bucket or tub in your bathroom to catch drips, or capture water when you let it run, recycle by using it to fill the toilet tank or use it to water plants, etc.
    - Average cost of a bucket or tub: \$3 to 15 – or recycle a bucket from another use
  - Fix drippy faucets and leaks
    - Average cost for a new faucet: varies broadly, starting at about \$50 and going up, plus installation costs



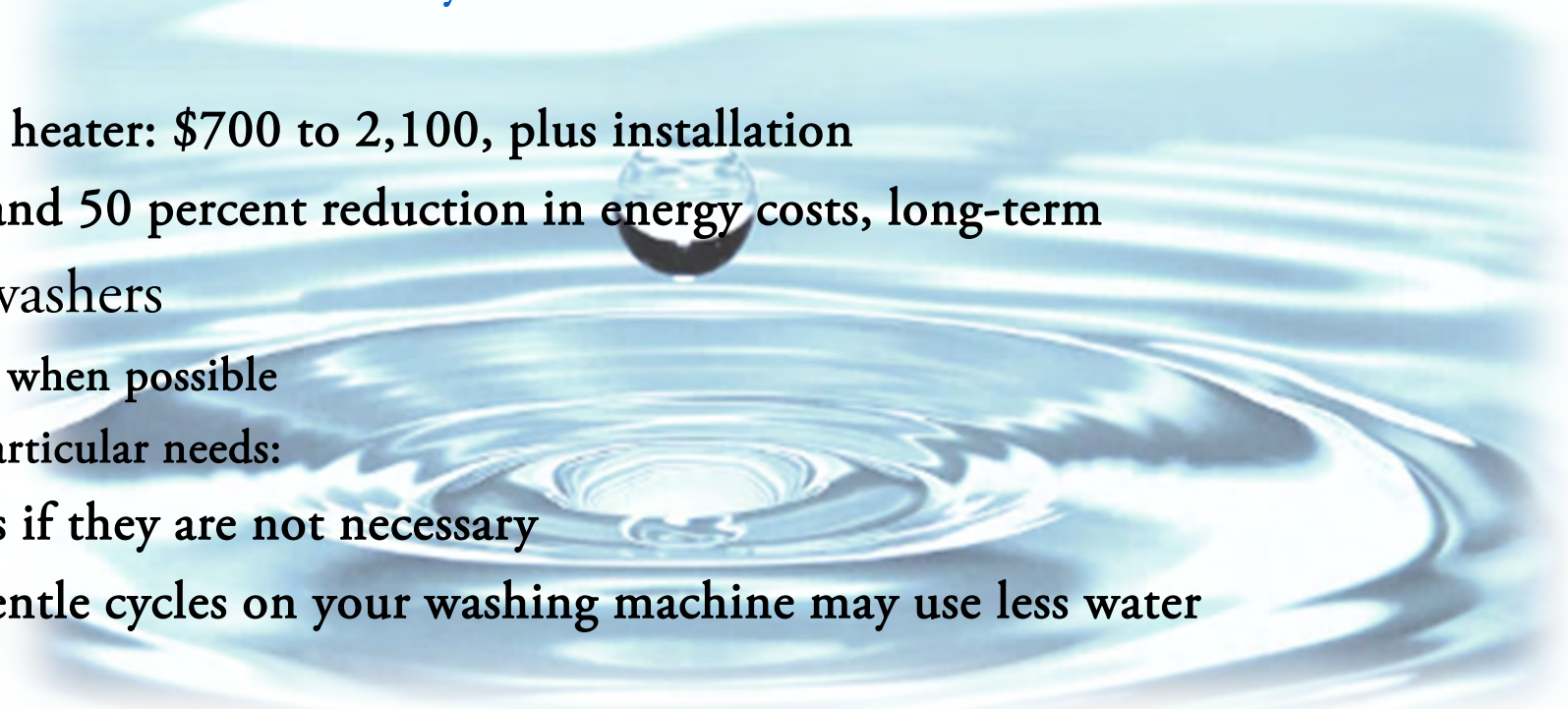
## Diving deeper into saving water: Appliances

### ✓ Water heaters

- Is your water heater the right size? Too small? Too large?
- Should you consider an tankless water heater?
  - <https://prudentreviews.com/tankless-water-heaters-pros-and-cons/>
  - <https://www.johnsoncomfort.com/should-you-consider-a-tankless-water-heater-for-your-home/>
- Average cost of tankless water heater: \$700 to 2,100, plus installation
- Possible savings: between 25 and 50 percent reduction in energy costs, long-term


### ✓ Washing Machines and Dishwashers

- Purchase energy-efficient models when possible
- Use your settings based on the particular needs:
  - Turn off extra rinse cycles if they are not necessary
  - Using delicate or other gentle cycles on your washing machine may use less water



# Water Conservation Series: Home, Yard, Farm & Ranch

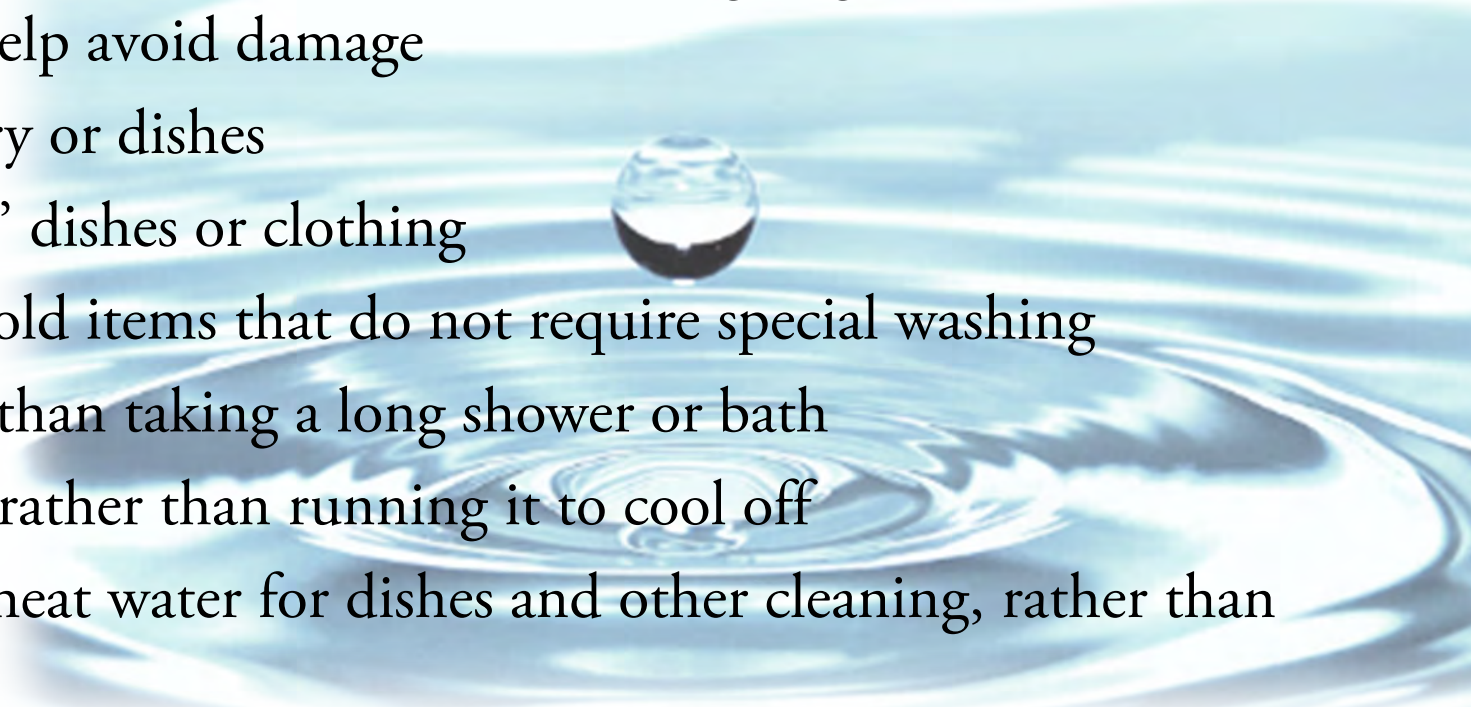
## Diving deeper into saving water: tips and tricks

- ✓ Install aerators on sink faucets and use ball-valve hose bibs (outdoor faucets) on house
  - ✓ Insulate hot water pipes well; this saves on running water for temperature control
  - ✓ Monitor and repair leaks around the house
    - Monitor your water meter – when does it run and how much.
      - Check your meter when no one else is home and no water should be running. If it is moving – even a little, you have a leak
    - Check for leaks under your sinks, around the toilet, etc. check joints and valves first
      - watch for corrosion that can cause leaks
  - ✓ Recycle and re-use
    - Use a bowl or pan of water to wash vegetables, rather than running the faucet – use the water for your houseplants
    - Use dish pans to wash dishes and use that water to water your trees or flowers outside
    - Catch water running for temperature control; use as mentioned above
- 

# Water Conservation Series: Home, Yard, Farm & Ranch

## Diving deeper into saving water: your habits

A lot of water-saving is about developing good habits. Here are a few final reminders and ideas:

- ✓ Remember to turn off the faucet! Getting a bucket, bowl, cup or other container of water to accomplish a task is almost always more efficient than using running water.
  - ✓ Turn off water household water at the source when you are going away; this could save a lot in water and money, and help avoid damage
  - ✓ Only wash full loads of laundry or dishes
  - ✓ Don't unnecessarily "pre-wash" dishes or clothing
  - ✓ Purchase clothing and household items that do not require special washing
  - ✓ Find new ways to relax, other than taking a long shower or bath
  - ✓ Chill water in the refrigerator rather than running it to cool off
  - ✓ Warm water in a tea kettle to heat water for dishes and other cleaning, rather than running water to heat
- 

# Water Conservation Series: Home, Yard, Farm & Ranch



# Water Conservation Series: Home, Yard, Farm & Ranch

## Resource links

- [https://aces.nmsu.edu/pubs/\\_g/G533.pdf](https://aces.nmsu.edu/pubs/_g/G533.pdf)
- <https://agriflifeextension.tamu.edu/library/water/water-conservation-checklist-for-the-home/>
- [https://www.ose.state.nm.us/WUC/wuc\\_homeOwners.php](https://www.ose.state.nm.us/WUC/wuc_homeOwners.php)
- <https://www.newmexicowater.com/help/conservation/save-at-home/>
- <https://www.pub.gov.sg/savewater/athome/watersavinghabits>
- <https://learn.eartheasy.com/articles/top-5-water-wasters-in-your-home/>
- <https://takecareoftexas.org/hot-wire/what-uses-most-water-your-home>
- <https://www.penlight.org/frequently-asked-questions/what-activity-in-my-home-uses-the-most-water/>
- <https://www.epa.gov/greeningepa/water-conservation-epa>
- <https://www.epa.gov/sites/production/files/2017-02/documents/ws-ourwater-new-mexico-state-fact-sheet.pdf>
- <https://www.4abc.com/blog/where-is-the-most-water-wasted-in-the-home-you-may-be-surprised>

# Water Conservation Series: Home, Yard, Farm & Ranch

## WATER WORLD

The only way to understand and appreciate the importance of water to our lives is to look at the data flow. BY CHARLES FISHMAN



### CLEAR AND PRESENT DANGER

People worldwide who either have no access to clean water or must walk to retrieve it:



### CITY OF LOST CHILDREN

**5,000**

Children who die from lack of water or from waterborne diseases (per day)

1 icon = 250 CHILDREN



### CONSERVATION NATION

Per capita water use in the U.S. (per day)



**300** tons of water are required to manufacture **1 ton of steel.**



**250** gallons of water are necessary to generate the electricity used at home by each American per day.



U.S. water use devoted to generating electricity



The U.S. uses more water **in a day** than it uses oil **in a year.**

The U.S. uses more water **in three days** than the world uses oil **in a year.**

**BOTTLE BABIES**  
Price of a typical half-liter bottle of water at a convenience store in the U.S.: **99 cents**

**FREE REFILLS**  
Number of times you can refill the half-liter bottle from the tap before using 99 cents' worth of tap water: **1,740**

### THE WATERING HOLE

Compare home water use in the U.S. to the U.K. and Canada and one alarming trend stands out:

**WE LIKE TO FLUSH**  
Volume of water used by U.S. toilets at home per person per day: **18.5 gallons**



**5.7 billion gallons** each day by U.S. toilets at home



**5.5 billion gallons** Volume of water used by all homes in the U.K. and Canada for all purposes (per day)

### FOOD VS. WATER

Amount of water required to raise and process food for the average American's 2,000-calorie daily diet:



### COCA-COLA'S SECRET FORMULA

Because of washing and other manufacturing processes, **5 liters of water** are required to produce **2 liters of Coke.**



# Water Conservation Series: Home, Yard, Farm & Ranch

## Next Week's Session:

**May 27 : Xeriscaping: Water Conservation & Beauty Combined**  
**Groundwater Level Monitoring** *with Kristin Pearthree,*  
*NM Bureau of Geology & Mineral Resources*



**Lush 'n Lean: Xeriscaping Gardens for Abundant Plant**  
**Diversity AND Water Conservation** *with Kevin Lombard*  
*& Marisa Thompson, NMSU CES*

For further information or to register:



Visit <https://aces.nmsu.edu/county/mora/water-conserve.html>

Contact Suzanne Cole 575-387-2856/ [sdcole64@nmsu.edu](mailto:sdcole64@nmsu.edu)

or Susann Mikkelsen 575-461-0562/ [susannm@nmsu.edu](mailto:susannm@nmsu.edu)



**May 20: Water Conservation**  
**in the Home**