

Americans flushing much more water than they think, research shows

By Los Angeles Times, adapted by Newsela staff on 03.10.14

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Morning traffic makes its way toward downtown Los Angeles along the Hollywood Freeway past an electronic sign warning of severe drought on Feb. 14, 2014. California is taking to the highways to spread the word about water conservation after months of drought. Photo: AP Photo/Richard Vogel

Americans use twice the amount of water they think they do and appear to be particularly clueless about how much H₂O they flush down the toilet each day, according to new research.

The study was published online Monday in PNAS, the journal of the National Academy of Sciences. It also concluded that Americans were only slightly aware of how much water goes into growing the food they eat.

"In general, people tend to underestimate water by a very large magnitude," said study author Shahzeen Attari, a professor in the Department of Public and Environmental Affairs at Indiana University.

The study's conclusions were based on an Internet survey of 1,020 people. The findings come amid a national drought that extends from the Pacific Coast to portions of the Mississippi Valley, with the most severe conditions in California.

Flushing Away Water

"Most Americans assume that water supply is both reliable and plentiful," Attari wrote. "However, research has shown that with [climate change \(https://www.newsela.com/?tag=global warming\)](https://www.newsela.com/?tag=global+warming) water supply will become more variable." Increased salt content in ground water and increased variability in precipitation may mean less water for crops or drinking.

Prior research has shown that over a quarter, or 28 percent, of water used within the average household is the result of toilet flushing. The Environmental Protection Agency says that installing low-flow or water-conserving toilets will result in the greatest savings in household water use. Yet fewer than 2 percent of the surveyed adults realized this, according to the study.

"That to me was really surprising," Attari said. "We may be underestimating how much water toilets use, because we use them frequently throughout the day."

A standard toilet uses about 3.5 gallons of water per flush, while a low-flow toilet uses 1.6 gallons or less, Attari noted.

"Reducing the number of times you flush — if it's yellow, let it mellow — would also decrease the amount of water you use in the home," she said.

Half Got It Wrong

Experts say that after installing a water-efficient toilet, the next greatest water saver is a high-efficiency clothes washer. A standard top-loading washer will use about 34 gallons per load. But, a high-efficiency front-loading clothes washer will use less than 15 gallons.

Yet when asked to name the single best thing Americans could do to conserve water, almost half of survey participants got it wrong. Roughly 43 percent of those surveyed said that taking fewer, or shorter, showers would save the most water.

The next most popular response — roughly 17 percent of those surveyed — said they would turn off the water while doing other activities, including brushing their teeth.

Attari said that taking shorter showers would help to save water, and shouldn't be discounted. However, the savings was less than many people perceived.

"The average length of a shower is 8.2 to 8 minutes," Attari said. "So if you were to decrease the length of the shower from 8 minutes to 5 minutes, that would save roughly 8 percent of your total water use in the home."

Water resources expert Peter Gleick, of the Pacific Institute in Oakland, Calif., has estimated that humans require 13.2 gallons of clean water each day to meet basic needs. Yet in 2005, the average American was estimated to use about 98 gallons per day.

Water Used For Crops

However, it wasn't only personal use of water that people had a loose grasp on in the survey. They also tended to underestimate how much water was "embodied," or used to cultivate, different food staples.

Asked to estimate how much water was used to produce a pound each of sugar, rice, cheese and coffee, the survey respondents said they were all about the same.

In reality, each require vastly different amounts of water: 157 gallons were required to make a pound of sugar; 299 gallons for a pound of rice; 606 gallons for a pound of cheese and a whopping 2,264 gallons for a pound of coffee.

"People don't realize how much embodied water is in the different foods that we eat," Attari said.

The author said that Americans had a somewhat better sense of how much water they use than they did about the amount of power they use. She said this was understandable as energy was transformed into many different things — light, heat, motion, sound, etc. Water was much more familiar, although rarely thought about.

"Water is a really essential but neglected resource," Attari said. "We need to start paying more attention to water just in general."

Quiz

- 1 What evidence can be found in the article to support the inference that low-flow or water-conserving toilet companies are missing out on more sales?
 - (A) Americans, according to a survey, do not like the makers of low-flow or water-conserving toilets.
 - (B) Fewer than two percent of surveyed adults know that such toilets save the most in household water usage.
 - (C) A standard toilet uses about 3.5 gallons of water per flush, while a low-flow toilet uses 1.6 gallons or less.
 - (D) Experts say that after installing a water-efficient toilet, the next greatest water saver is a high-efficiency clothes washer.

- 2 Which of the following details BEST illustrates the magnitude by which Americans misunderstand their water usage?
 - (A) "Most Americans assume that water supply is both reliable and plentiful," Attari wrote.
 - (B) "People don't realize how much embodied water is in the different foods that we eat," Attari said.
 - (C) "We may be underestimating how much water toilets use, because we use them frequently throughout the day."
 - (D) Yet when asked to name the single best thing Americans could do to conserve water, almost half of survey participants got it wrong.

- 3 Which of the following is NOT part of an objective summary of the article?
 - (A) Americans do not realize how much water they use.
 - (B) Americans do not know the best ways to save water.
 - (C) Americans underestimate the amount of their water use.
 - (D) Americans use a lot of water on purpose despite the harm.

- 4 Which of the following groups of words and phrases BEST shows how the central idea is re-emphasized over the course of the article?
 - (A) "Pacific Coast"; "Mississippi Valley"; "California"
 - (B) "severe conditions"; "climate change"; "less water"
 - (C) "low-flow toilet"; "high-efficiency clothes washer"; "shorter showers"
 - (D) "particularly clueless"; "underestimate"; "fewer than 2 percent realized this"

Answer Key

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