

Implementing the 40 Gallon Challenge to Increase Water Conservation

Abstract

The 40 Gallon Challenge is an easy-to-use, comprehensive indoor and outdoor water conservation educational tool. It can be used nationwide and easily incorporated into existing educational programs. Promotional materials and pledge cards are available on the 40 Gallon Challenge website and can be modified by educators. The website displays data related to the impacts of the educational tool nationwide, statewide, and countywide. As of the writing of this article, 10,395 people had read the indoor and outdoor water conservation practices and pledged to save approximately 1.8 million gal of water per day (645 million gal per year).

Mary Carol Sheffield
Paulding County
Extension Coordinator
University of Georgia
Dallas, Georgia
msheff@uga.edu

Ellen Bauske
Program Coordinator
University of Georgia
Center for Urban
Agriculture
Griffin, Georgia
ebauske@uga.edu

Paul Pugliese
Bartow County
Extension Coordinator
University of Georgia
Cartersville, Georgia
pugliese@uga.edu

Heather Kolich
Forsyth County
Extension Agent for
Agriculture and
Natural Resources
University of Georgia
Cumming, Georgia
hkolich@uga.edu

Diane Boellstorff
Water Resource
Specialist, Texas A&M
AgriLife Extension
Service
Department of Soil
and Crop Sciences
Texas A&M University
System
College Station, Texas
dboellstorff@tamu.edu

Introduction

With an increasing population and an increased incidence of regional water shortages projected for the next several years (Government Office of Accountability, 2014), water conservation is an important component of many Extension education programs. It is both a challenge and a priority to reach populations in rural and urban areas with water conservation information. Messages and marketing for water conservation exist broadly, but people's water conservation behaviors can be difficult to change due to their personal experiences with water use and their varied understanding of how their choices affect water usage rates (Emmel, Parrott, & Beamish, 2003; Hurd, 2006).

Both indoor and outdoor water use are important components of water conservation, with outdoor and landscape

uses representing about 30% of total household water consumption (U.S. Environmental Protection Agency, 2013). Extension programs often are aimed at increasing water conservation in and around the home. However, evaluating the impact of Extension programming directed at water conservation can be complicated (Shepard, 2002). The 40 Gallon Challenge (www.40GallonChallenge.org) is an easy-to-implement nationwide water conservation education tool that allows Extension professionals (and clients) to see the potential impacts of educational efforts. The tool includes annual follow-up surveys that are used to assess whether and how participants have implemented conservation practices.

Background

The 40 Gallon Challenge is an educational tool adapted from a program launched by the San Diego County Water Authority (2007) and modified and implemented by the University of Georgia Center for Urban Agriculture to teach water conservation. Essentially a self-audit online checklist, the 40 Gallon Challenge provides an individualized estimate of water savings resulting from the implementation of personal water-conservation practices. A participant engages in the self-audit by selecting practices that fit his or her lifestyle and then pledging to implement them, with the goal of saving 40 gal of water per day. In the process of selecting practices, participants learn how to conserve water and how much water is used during routine activities.

The 40 Gallon Challenge can be used nationwide, and all 50 states are included in the unique, interactive website design. Extension units in nine states (Alabama, Arkansas, Georgia, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, and Texas) have implemented programming involving the 40 Gallon Challenge and urged participants to complete online or paper pledges. Entities outside Extension, such as schools, conservation organizations, and water providers, also have used the challenge with their clients.

Implementation Strategies

The website records participant pledges and sends an automated email to each new pledger confirming his or her selected conservation practices. Updating every 10 min, the website displays top-ranked states and counties (relative to gallons saved daily and pledges), most frequently pledged activities, and practices that provide the greatest reductions in water use. Visitors can see total pledges and potential water savings from a nationwide scale to a county scale. Moreover, water conservation promoters can easily share the website link.

The tool is flexible and easy to use. All promotional materials created to support pledges can be downloaded from the site. Paper pledge cards can be printed for use at events, and data from the completed pledge cards can be entered into the online database by staff or volunteers. Paper pledge cards can be used in traditional Extension venues, in schools by teachers, in 4-H programming, by master gardener volunteers, and in other adult education programs conducted by water authorities and other groups. In addition, event participants can enter pledges online through the use of Wi-Fi-enabled tablets. Annually, each consenting participant receives a follow-up survey by email that measures how the person's actual conservation practices match his or her pledge.

Water Conservation Education Through Use of the 40 Gallon Challenge

At the time of this writing, approximately 10,000 people nationwide had read the lists of indoor and outdoor water conservation practices displayed on the website and pledged to save approximately 1.8 million gal of water per day (645 million gal per year). Participants have pledged to save water in a variety of ways. The practices that participants have most often pledged to undertake are turning off the water while brushing their teeth,

turning off the water while rinsing dishes, running the dishwasher only when full, not using the toilet as a wastebasket, and washing only full loads of laundry. Practices that are frequently pledged that conserve the most water are reducing irrigation station run times, sweeping driveways and sidewalks instead of hosing off debris, and fixing a leaky toilet.

In a follow-up survey sent by email to almost 2,600 participants in 2014, 17% of those surveyed responded ($N = 422$). Eighty-six percent reported following through with at least 75% of their pledges, whereas only 0.5% reported not following through with their pledges at all.

Half of the respondents (50.4%) reported saving \$5 to \$90 per month on their water bills. The other half (49.5%) either did not save money on their water bills or did not know whether they had saved money. Survey respondents reported saving a total of \$3,427 per month on their water bills. Extrapolating these savings to all 40 Gallon Challenge participants suggests a nationwide savings of \$81,062 per month, or \$972,744 per year.

Participants' comments on the survey instrument indicated that they had gained water conservation knowledge and acted on it:

- "It was an easy eye-opening experience."
- "I think this is a great program. Anyone who uses water should be able to do at least one thing on the list."
- "The fixes I made really improved my water bill! Thanks for the information on how to do it."
- "I installed three 55 gallon rain barrels at my house and inspired 2 friends to start one each. My sister just recently jumped on the rain barrel bandwagon and has plans to install two next year."

Conclusions

The 40 Gallon Challenge is a flexible, easy-to-use water conservation education tool. Its use can demonstrate intention and spur Extension audiences to adopt indoor and outdoor conservation practices. Extension educators are encouraged to use this ready-to-go tool to initiate new adoption of water conservation behaviors in their regions and nationwide.

References

- Emmel, J. M., Parrot, K., & Beamish, J. (2003). Dishwashing and water conservation: An opportunity for environmental education. *Journal of Extension*, 41(1) Article 1RIB3. Available at: <http://www.joe.org/joe/2003february/rb3.php>
- Government Accountability Office. (2014). *Freshwater: Supply concerns continue, and uncertainties complicate planning* (GAO Publication No. GAO-14-430). Retrieved from <http://www.gao.gov/products/GAO-14-430>
- Hurd, B. H. (2006). Water conservation and residential landscapes: Household preferences, household choices. *Journal of Agricultural and Resource Economics*, 31(2), 173–192.
- San Diego County Water Authority. (2007). *Water Authority launches 20gallonchallenge.com to support conservation campaign*. Retrieved from www.sdcwa.org/water-authority-launches-20gallonchallengecom-support-conservation-campaign

Shepard, R. (2002). Evaluating Extension-based water resource outreach programs: Are we meeting the challenge? *Journal of Extension*, 40(1) Article 1FEA3. Available at: <http://www.joe.org/joe/2002february/a3.php>

U.S. Environmental Protection Agency. (2013) *Outdoor water use in the United States* (EPA Publication No. EPA-832-F-06-005). Retrieved from <http://www3.epa.gov/watersense/pubs/outdoor.html>

Copyright © by *Extension Journal, Inc.* ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the *Journal Editorial Office*, joe-ed@joe.org.

If you have difficulties viewing or printing this page, please contact [JOE Technical Support](#)