

Messaging can save millions of gallons of water a month

To encourage water conservation as climate change makes drought worse, water district managers should invest in effective messaging campaigns that promote household behavior change.

Based on **Heather Hodges, Colin Kuehl, Sarah E. Anderson, Phillip J. Ehret, and Cameron Brick. 2020. "How Managers Can Reduce Household Water Use Through Communication: A Field Experiment." *Journal of Policy Analysis and Management*.**

The Policy Problem

Climate change is expected to increase the frequency and intensity of droughts even as populations increase. In the face of unprecedented water shortages, water district managers need to find ways to encourage household water conservation. One approach that water districts regularly use is sending emails, websites and physical mailers to encourage voluntary reductions in water use. However, many messaging campaigns focus on highlighting water scarcity, even though psychological science suggests that knowledge of a problem is usually not enough to change behavior. Instead, people need a personal reason to use less water.

Key findings and proposed solutions

- Messaging to 10,000 households in a California water district reduced water usage by an average of 500 gallons in the first month.
- Water managers should invest in messaging campaigns to reduce water usage.
- Local agencies' communication to residents should always include three messaging components: information about the problem, a motivation prompt to solve it, and concrete suggestions for behavioral skills to change consumption patterns.
- Water districts should target high-use households, as they were more responsive to mailers.

What We Found

When households received a postcard that contained three components (information about the problem, social pressure to solve it, and concrete information on how to change behaviors, water use dropped an average of 509 gallons per household over the first month, with declining but persistent effects for approximately three months. This messaging strategy could have saved more than five million gallons in the first month across 10,000 households.

We estimate that the mailings cost approximately \$1.42 per hundred acre feet (HCF) saved, which is a fraction of the \$5.05 per HCF cost in the lowest tier of usage. Thus, messaging campaigns are cost-effective and pro-social. Cost effectiveness could be even higher if campaigns were targeted toward high-use households. We recommend



Figure 3. Postcard design as part of our field experiment. This example contains all three elements recommended for the most persuasive behavioral change interventions: information (problem awareness about the drought), motivation (via social norms), and specific suggestions for how the public can save water. The names of the lake and the district are redacted in this figure.

What We Did

We conducted a field experiment among 10,000 single-family households in a California water district. We randomly mailed households one of three different postcards, and compared water usage in each postcard group to a control group that did not receive a postcard. Our experiment was focused on the information-motivation-behavioral skills (IMB) model, which is a theoretical framework for increasing the likelihood of behavioral change. One postcard included all three prompts (information about the problem, a motivation to solve it, and concrete behavioral skills to respond). The two alternate postcards dropped either the motivation component or the behavioral skills component.