

# Can human behaviour fix the California drought?

April 21 2015, by Paul Fraumeni

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Credit: docentjoyce via Flickr

California is experiencing a drought that has gone far beyond a "dry spell".

In fact, the drought and related [water](#) shortage are so profound that Governor Jerry Brown is enacting measures to have Californians cut back on water consumption by 25 per cent and the state is offering citizens ways of changing their green lawns to gardens of cactus. And San Diego County is building a \$1 billion plant that will bring water in from the Pacific Ocean and take the salt out of it.

But there are wider issues. Writer Paul Fraumeni explores them with Professor Stephen Scharper.

Sharper is an associate professor of anthropology at U of T Mississauga and at U of T's School of the Environment. He is also cross-appointed to the department for the study of religion. Scharper focuses his research and teaching in the areas of environmental ethics, religious ethics and ecology, ecological values and world views, and the ethics of violence and nonviolence. He is the author of "Redeeming the Time: A Political Theology of the Environment" and co-author with his wife, social-cultural anthropologist Hilary Cunningham, of "The Green Bible." He is also a columnist for the *Toronto Star*.

**There is, of course, science tied to the global climate change behind this drought. But what is your take on the human behaviour that will need to change to deal with this problem?**

Many people have been predicting this for a long time. The Colorado River, which has been diverted and helps a lot of the agriculture in the southwest US, including California, has been running very low and some of the reservoirs will never come back, according to the Environmental Protection Agency in the US. Seventy per cent of the Colorado River is diverted for farmland and 70 per cent of the water used in California is going to farmland.

So it is certainly a question of [human behaviour](#) and I'm glad that Governor Brown is calling for a 25 per cent decrease, but so far it's only in individual and municipal use. Farmlands are off limits. Not to deny the importance of what Governor Brown is doing, but the use of water for farmland needs to be examined if the state is going to address the problem.

As we have seen in the news and based on my own research, this is already leading to a [behavioural change](#) in municipalities and in certain parts of the state. People who had green lawns are now converting to desert landscapes and are getting the remittance from municipalities to make that transition.

So part of what is happening is a realization that you can't simply transplant another ecosystem onto a California desert system or arid Southwestern system. In a sense, California and much of the U.S. Southwest is living beyond its ecological means. Certain lifestyles have been adopted and crops are being grown that are not endemic or sustainable for this particular bioregion.

**But the agricultural sector California is also a major economic force. It's one of the great agricultural regions of the world. And it employs thousands of people.**

Again, news reports have told us the drought is already leading to unemployment. Because there is no water in certain areas, some farms are just not sustainable anymore in terms of what they used to raise. There is water-rich agriculture that goes on in areas that can't sustain it. People are becoming jobless because they cannot sustain the kind of things they are growing.

But it doesn't mean that things can't grow in that area. It means that there has to be a re-examination of what has grown and how it's grown in terms of the water usage.

Maude Barlow [the Canadian author and environmental advocate who was senior advisor on water to the United Nations in 2008/2009] points out that many water-rich crops are being grown in California and then exported. Rice and hay, for example, are very rich in water retention. In effect, what's happening is the water of the ecosystem of California is being exported elsewhere and that water is not being replenished.

## **In North America, is this a problem limited to California?**

No. The entire U.S. southwest region has been experiencing an average temperature increase of about 1.5 degrees Fahrenheit over the last century and it is expected to rise between 2.5 and 8 degrees Fahrenheit by the end of this century. And this trend of warming has already led to a decrease in the snowpack and the Colorado River flow. That's a crucial source of water. According to the EPA, some of the reservoirs in this area will never be replenished. Throughout the southwest, there are devices called water pivots that are drilled into the ground 380 feet into the water table. These pivots pump water from underground aquifers, which is then sprayed onto the crops. This is a major experiment in agriculture and in water use. And we're seeing the negative effects.

Jennifer Baichwal's film *Watermark* has amazing footage of these water pivots and circular fields in the southwest and how devastating they are. You can see where the aquifer has been depleted and the vegetation over it is going brown. They don't have the replenishment capabilities that were there before. So while we might be talking about jobs in the short term in California in the agricultural sector, they're not going to be there

in the long term without water.

**On a broader scale, if we are going to scale back on the practices that have led us to this global environmental crisis, it's really going to take big change, isn't it?**

Yes, and that's where the role of government is very important. The Montreal Protocol is a good example. That was an international protocol that was signed and has met with some success in terms of limiting the use of CFCs because of their effect on the ozone. And there were certain industries affected but those industries were in agreement as long as there was a standard they would all subscribe to.

So, when municipalities and governments take initiative around major change issues, things can get done.

In a completely different area, in World War II, the U.S. government ordered General Motors, Ford and Chrysler not to build any domestic cars. They switched almost overnight to military production. That was because of government legislation.

**So it seems there is precedent for legislating environmental behavioural change.**

Once you make it easy for people to recycle, it becomes part of their being. I've noticed that with my students. They are used to green bins and blue bins. Then they move to another city where there isn't a municipal recycling program and they feel like they're committing a sin when they have to throw everything in the garbage. What we've done in Toronto wasn't a major social change with a lot of metaphysical angst

for citizens. It was brought about by government policies that made this a standard practice.

So some of these conversations about the enormity of the change that's required are helpful but they sometimes don't take into account the effectiveness of unified, legislated action that translates into practice and makes these kinds of things standardized, easy and convenient.

Government backing of the recycling program has created a new ethos. And this can happen in other areas of care for the environment too.

This is a moment for not just cutting off personal water use and turning the tap off when you're brushing your teeth, as important as that is. This is a moment of reflection, invitation and, I hope, legislation that will cause people to think about water use in the industrial sector too. This is for the long-term prosperity of the state and sustainability of the ecosystem.

Provided by University of Toronto

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