A black and white cow's head is shown in profile, facing left. The cow has a white blaze on its face and a white patch on its chest. The background is a dark, deep blue with a subtle, starry or nebula-like texture. The lighting is dramatic, highlighting the cow's features against the dark background.

In this era of short showers and dying lawns, few people are talking about the real culprit of the mass water shortage: meat and dairy production. Writer **Mark Hawthorne** exposes the truth behind this worldwide crisis.

Truth or Drought?

WHEN JERRY BROWN STEPPED TO AN outdoor lectern near Lake Tahoe to make an announcement on April 1, he acknowledged the spot where he was standing should have been blanketed in five feet of snow. Instead, the California governor was addressing reporters in a grassy field. For the first time in 65 years of record-keeping, this part of the Sierra Nevada mountains—which the state relies on to replenish lakes and streams—was snowless at that time of the year. “We’re in a historic drought,” he said, “and that demands unprecedented action.”

Emphasizing that there is no end in sight to the four-year dry spell, the governor then issued California’s first-ever executive order mandating residents and some businesses to reduce consumption 25 percent by February 2016. He even empowered individual water districts to penalize users for non-compliance and proposed fining the biggest wasters as much as \$10,000 per day.

For a population that had spent the past few years dutifully taking shorter showers and letting their lawns go brown, the governor’s announcement was accepted as another consequence of living in the Golden State. But few realize just how dire the situation is. NASA water scientist Jay Famiglietti predicted last March that the state has only about a year’s worth of surface water left. And it’s not just reservoirs that are being depleted: underground aquifers, which serve as the state’s backup hydration system, are rapidly diminishing as well. Farmers are drilling so many wells and sucking so much H₂O from below that the ground level in some spots is actually dropping, causing roads to buckle and irrigation canals to crack.

That sinking feeling is among the reasons some water-conservation advocates wonder why policymakers, including Governor Brown, haven’t been calling out animal agriculture, which uses and pollutes much of California’s groundwater. When aquifers run dry, experts say, the real water crisis begins. They liken aquifers to a savings account, with underground water there for a rainy day—or, in this case, a lack of them. Right now, the state is creating a deficit, and it could take thousands of years’ worth of wet winters to replenish what’s being withdrawn.

So why isn’t the primary culprit of the overuse of water consumption being discussed by those whose jobs it is to solve this problem?



Biggest drain

Meat has become the largest contributor to our water crisis that no policy makers—including Brown—are discussing. Perhaps the biggest issue is the governor’s mandate to reduce water consumption, which does not include agriculture. The problem, according to the Public Policy Institute of California, is that agriculture represents roughly 80 percent of all human water use in the state, and much of that is for the meat, egg, and dairy industries. Indeed, animal agriculture’s water footprint accounts for 47 percent of total water usage.

Rather than focusing on animal ag’s water use, media attention has shifted to other crops, most notably almonds. For instance, when *Mother Jones* reported last year on how much water it takes to grow almonds (one gallon per nut), the media began shaming almond-lovers and ignored a more viable way to conserve: going vegan. What many of these outlets failed to report was the comparison of almonds versus a crop such as alfalfa, which uses more water than any other crop in California. “Alfalfa

is grown to feed farmed animals worldwide,” Robert Glennon, a water policy expert at the University of Arizona, says, “and farmers are exporting the grain to China for the country’s burgeoning dairy industry.” According to Glennon, farmers use more than 100 billion gallons of water from the Colorado River each year just to grow the feed for Chinese cows. “In California, almost a million acres of alfalfa are irrigated, and by some estimates one-third is exported,” he notes.

The water usage for other animal-based foods is equally staggering. A 10-ounce steak, for example, takes approximately 1,062 gallons while two large eggs require 47 gallons. Needless to say, this is a lot of wasted water, especially when compared to the amount of water used for non-animal crops. But according to Sarah Rice, program manager for vegan food-justice nonprofit Food Empowerment Project (FEP), this discrepancy is not only being ignored, it’s being promoted within certain governments.

“The process of killing animals for food

WaterWisdom

Public outreach campaigns tell us to shorten our showers and stop watering our lawns. But how much water are we really saving?



Washing a car with bucket
3 GALLONS



Flushing a standard toilet
3.5 GALLONS



Doing a load of laundry
40 GALLONS



Taking a 10-minute shower
42 GALLONS



Taking a bath
70 GALLONS



Eating one
quarter-pound hamburger
450 GALLONS

wastes and pollutes massive amounts of water," Rice says, "but it rarely gets any attention." FEP volunteers have been investigating and doing public outreach in front of a chicken slaughterhouse named Petaluma Poultry, a business that exemplifies what's wrong with the state's water mandates. "In 2012, this relatively small operation was killing 50,000 chickens and using 315,000 gallons of water every single day," Rice says. "That is more than twice as much water as the average household in that city uses in a year. Still, the city council of Petaluma has approved an expansion of the slaughterhouse."

Food price bubble

What makes California's drought unique, apart from LA homeowners spray-painting their lawns green, is that more than 400 of the nation's commodity foods come from the state,

economics professor at Pennsylvania State University, says. "The strong dollar is offsetting it to some extent so far, but that may not last much longer."

What consumers pay for other fresh produce could also increase and impact a family's grocery budget. For example, lettuce could go up 34 percent. Tack on another 23 percent for broccoli while avocados might set back shoppers an extra 28 percent. The problem, Dave Heylen of the California Grocers Association explains, is that "we just don't know for sure what's going to happen." In the meantime, market forces will take its course, he adds, and we'll adapt to a new normal. "Prices will reflect supply and demand. If there's less of a supply, and the demand is still high, obviously that's going to have an impact on price. If the prices go up but the demand goes down because of it,

"We need to create new social norms in order for people to understand this and make the change the planet so desperately needs from us."

including 99 percent of all almonds, 97 percent of kiwis, 95 percent of celery, 89 percent of cauliflower, and 71 percent of spinach. In fact, California farmers produce nearly half of all US-grown fruit, nuts, and vegetables—and a healthy slice of what's exported to countries that don't grow such staples as asparagus, berries, lettuce, and citrus fruit. Simply put: this drought affects all Americans, regardless of where they live.

Surprisingly, prices for these foods have stayed relatively stable so far, chiefly because of our global economy, notes US Department of Agriculture economist Annemarie Kuhns. "The US dollar is really strong, so we've been able to get a lot of imported fresh fruit and vegetables at cheaper prices," she says. "This creates a downward pressure on retail prices for these foods. As an example, 88 percent of US avocados are grown in California, but 69 percent of the avocados we consume are actually imported from other countries."

Not everyone agrees with Kuhns' assessment, as other experts say a spike in food prices is a distinct possibility. "We will see it once the fall crops would ordinarily hit the market," James Dunn, an agricultural

there are a million different factors that come into play."

Solutions floated

Adapting to life with less water will clearly require some creativity and sacrifice. This, many say, is troublesome because we are accustomed to living as though our resources are infinite. However, some celebrities have addressed this issue publicly, asking consumers—and legislators—to reconsider the environmental impact of animal agriculture. One such person is musician/activist Moby, who told *Rolling Stone*, "Animal products are just egregiously unsustainable ... It takes up to 500 pounds of grain to make one pound of beef. And it goes without saying that 500 pounds of grain is food that could be fed directly to people ... It's a really irresponsible and inefficient way of using food resources."

Moby has been outspoken about water usage for years, and he recently teamed with Courage Campaign and Food & Water Watch to ask Governor Brown to restrict groundwater pumping and create a new water system that will serve California for at least the next 100 years. Actress Pamela Anderson has also been


EcoDiet

On average, a vegan consumes nearly 600 fewer gallons of water per day than someone who eats the typical American diet.

vocal about this issue, starring in an Alfred Hitchcock-inspired PETA advertisement that explains how dairy and meat farms use half of the country's water. Other eco-conscious celebrities, including Wendie Malick and Conan O'Brien, have been raising awareness about animal ag and water conservation through public service announcements and social media.

The Department of Water Resources and the Association of California Water Agencies have their own public-outreach campaign called Save Our Water that encourages consumers to rethink their household water use, while the Metropolitan Water District of Southern California's Be Water Wise program offers residents rebates and other incentives for being efficient.

Unfortunately, the idea that taking shorter showers will solve California's problem simply isn't enough, says Lorelei Plotczyk of Truth or Drought, a grassroots campaign that raises awareness about the drain animal products have on our planet. "Along with traditional water conservation at home," Plotczyk says, "we advocate shifting to a plant-based diet immediately. Don't be afraid to stand out and eat differently than your friends and coworkers and to share this information. We need to create new social norms in order for people to understand this and make the change the planet so desperately needs from us."

With water tables dropping and food prices potentially climbing, even California's most influential public servant seems to be coming around. Governor Brown was taking part in a June forum on the drought at the University of Southern California when, with one statement, he both ended his long silence concerning animal agriculture's water use and gained the respect of vegetarians everywhere. "If you ask me," he told the crowd, "I think you should be eating veggie burgers." 

Mark Hawthorne's (@markhawthorne) latest book, *The Vegan Ethic: Embracing a Life of Compassion Toward All*, will be published in 2016.

FoodFacts

Just how much water does it take to grow the food we eat? A quick glance at the numbers reveals that a vegan diet may truly save the world.



1 pound carrots
14 GALLONS



1 pound kale
36 GALLONS



1 pound avocados
145 GALLONS



1 pound chicken flesh
266 GALLONS



1 pound pig flesh
660 GALLONS



1 pound tomatoes
16 GALLONS



1 pound potatoes
48 GALLONS



1 pound eggs
188 GALLONS



1 pound almonds
304 GALLONS



1 pound cow flesh
1,770 GALLONS