

# What environmentalists get wrong when they use the California drought to attack fracking

Chris Mooney, *Washington Post*, 4-14-15

With the continual worsening of California's drought, an odd argument — in some ways as much meme as argument — has arisen. It's the notion that in the context of the drought, it's important to cut back on the water used in industrial hydraulic fracturing or "fracking" operations in the state.

Here's one example of the basic idea being expressed, by Californians against Fracking:

But there's one problem. Whatever you might think about fracking — and there is ample room for disagreement on this complex issue — it is pretty hard to argue that the amount of water that the oil and gas technology uses in California reaches a scale sufficient to count as a major drought contributor. Rather, in the grand context of California's water woes, the numbers appear small indeed.

How small?

While it's not clear where the 2 million gallon figure above comes from, Reuters recently reported that California oil companies used "214 acre-feet of water, equivalent to nearly 70 million gallons, in the process of fracking for oil and gas in the state last year, less than previously projected." The story, which cited "state officials" for the figure, was widely read, and the factoid ended up in viral images like this one.

Seventy million gallons may sound like a large number. But in the context of California's drought, it's not. In December, NASA noted that it would take 11 trillion gallons to end the drought.

And in a blog post recently, Michael Campana, a hydrologist at Oregon State University, tore into those citing the 70 million number, noting that in 2010, California's freshwater "withdrawals" amounted to "31 billion gallons per day or 11.3 trillion gallons per year" (excluding thermoelectric withdrawals, which Campana said he assumed were "not freshwater").

What does that mean for the fracking number? Campana writes:

Fracking accounts for 0.00062% (or 0.0000062) of the state's annual freshwater withdrawals. A lot of water? Not in my book. In fact, I thought there was an error – that the figure should have been 70M gallons *per day*. But note that *locally* 70 MGY could be a significant amount.

Similarly, California Gov. Jerry Brown was recently asked by "Meet the Press" host Chuck Todd, "Considering how much water, by the way, is used for fracking, isn't that, alone, your water crisis in California, isn't that alone enough reason to prohibit fracking, or temporarily stop it?" Brown responded, "Fracking in California has been going on for more than 50 years. It uses a fraction of the water of fracking on the East Coast, for gas, particularly. This is vertical fracking for the most part. It is different."

Vertical fracking means that while water is indeed being blasted underground to crack rock, it isn't being combined with horizontal or "sideways" drilling, a relatively new technology that has enabled the unconventional oil and gas revolution by allowing for the drilling of long lateral passages beneath the ground, following a roughly 90-degree turn of the drill. Rock Zierman, chief executive of the California Independent Petroleum Association, says that most fracking in California is indeed vertical rather than horizontal, due to the state's particular geology.

“Hydraulic fracturing is so much different here in California,” Zierman said. “We pretty much only do vertical, single-stage hydraulic fracturing.” Therefore, Zierman thinks the 70 million gallon figure is “about right.” (For a good contrast of vertical versus horizontal fracking, see here.)

A recent report from the California Council on Science and Technology concurred, noting,

Generally, current hydraulic fracturing in California tends to be performed in shallower wells that are vertical as opposed to horizontal; and requires much less water per well, but uses fluids with more concentrated chemicals than hydraulic fracturing in other states. For example, in California, a hydraulic fracturing operation consumes on average 530 cubic meters (m<sup>3</sup> ; 140,000 gallons, gal) of water per well, compared to about 16,000 m<sup>3</sup> (4.3 million gal) per well used in horizontal wells in the Eagle Ford Formation in Texas.

I called Californians Against Fracking to ask why the group was raising fracking in the context of the drought, given these relatively small numbers — and when there are so many bigger ways to cut water use, such as changing standards for people’s toilets and faucets or, heck, taking on agricultural uses, which consume an estimated 80 percent of California’s water supply.

Patrick Sullivan, a spokesperson for Californians Against Fracking, responded by raising some questions about the 70 million gallon figure (saying that it is, in his words, based on “self-reported data”) and also arguing that water used for fracking is different from other uses.

“This is water that is by and large taken out of the water cycle for good,” he said. “It’s too contaminated to use in any other way.” That, says Sullivan, makes water used in fracking different “from water that’s used to water your lawn or brush your teeth.”

Sullivan also pointed out concerns about water being contaminated by industrial wells used to dispose of wastewater. As the Los Angeles Times reported last month,

Division of Oil, Gas and Geothermal Resources officials admitted last summer that for years they inadvertently allowed oil companies to inject wastewater — from fracking and other oil production operations — into hundreds of disposal wells in protected aquifers, a violation of federal law.

So, according to Sullivan, objections to fracking aren’t simply about the 70 or so million gallons used last year. Rather, it’s about all the different water uses of industry operations — and, especially, about the possibility of expanded fracking in California in the future, and thus, increased water use.

But Zierman doubts that’s going to happen, at least in the short term. “Because of oil prices, we’re going to see drilling cut significantly, maybe 40 or 50 percent less drilling,” he says. “That’s going to lead to less hydraulic fracturing and less water use, both.”

Longer term, environmentalists are also worried about fracking in the much touted Monterey Shale — but for the moment, it’s not clear how many hydrocarbon resources lie there. Estimates of recoverable resources were “dramatically lowered” recently, notes the California Council on Science and Technology, which calls the issue of how much oil can be recovered from the formation “highly uncertain.”

So there’s much uncertainty about how much this resource will be developed, or how much that will, in turn, bring on more fracking-related water use. The California Council on Science and Technology will be releasing further, independent fracking studies on July 1.

Undoubtedly, greens and industry will continue to tussle over the future of fracking in California — but

the point for the moment is that all of this seems a side issue in the context of the drought.

It's okay to be against the fracking boom for many reasons — such as what it does to communities, or its potential health risks, or methane emissions. But when it comes to the drought, environmentalists have better arguments at their disposal. For instance, the drought itself can be much more easily tied to climate change than to fracking.

Meanwhile, the California Energy Commission just moved to impose rules for the installation of far more water-efficient toilets, faucets and urinals — rules that, according to the commission, could save 105 billion gallons of water per year.