

Mike Dunbar: Getting a little feverish doing drought math

Journalists are notoriously poor at doing math, especially drought math. Consider this quiz:

What's left when you take nothing from nothing?

A lot of bloggers and commentators believe the answer is 25 percent. They've criticized Gov. Jerry Brown for giving "Big Ag" a drought pass. Unfair, they cry, echoing the wails of urbanites required to cut consumption by a quarter (or more, in our case).

Why aren't farmers being asked to do more?

Because most (not all) have already cut far more. A 25 percent cut would be an improvement. Farmers around Fresno have been told they'll get nothing this year from their usual water suppliers – same as they got last year. That led farmers to fallow 400,000 acres last year – or 5 percent of the state's irrigated farmland. This year it could be two or three times that much. Around here, many farmers will do with half as much as they got last year, which was 30 percent less than they got the year before.

Bottom line: Twenty-five percent of nothing is ... not enough for some people.

How much water fits into an almond?

One almond equals one gallon. Mother Jones magazine has been drilling this into our heads for a year. And it's true that a gallon-to-almond ratio is 1. Since there are 377 almonds in a pound, many scribes have reported that by exporting 1.3 billion pounds of almonds, we exported 490 billion gallons of water with them. Curse the thirsty almond!

But if journalists are required to show their work on this question, they fail. They seem to forget that the typical almond weighs 1.2 grams. A gallon of water weighs 8 pounds, or 3,785 grams. So where did the other 3,783.8 grams of water go? If you're from around here, the answer is obvious: into the trees, leaves, flowers, hulls, roots, ground and air. That water stayed right here.

But if you're a pundit, you know all that water went to China.

How much water can an almond drink?

By now you've heard that almonds are California's thirstiest crop. So, let's go back to that gallon-per-nut number. You get 23 almonds per ounce. So it requires 23 gallons of water to grow an ounce of almonds. But man does not live on almonds alone. Depending on whom you ask, an ounce of beef requires 106 or 150 gallons (some cows must be thirstier) to produce. Lamb takes 84 gallons, pork 41. Almonds aren't even the thirstiest nonsentient crop. Lentils require 71 gallons an ounce, and chickpeas gulp down 76 gallons.

We should also point out that *you* are 90 percent water. So, doing journalism math, if we all lose just 25 pounds, we'll have solved the drought problem. Right?

When does $40 + 50 + 80 = 100$ percent?

What percentage of California's water do farmers consume? The Los Angeles and New York Times, Bloomberg View, the esteemed Economist magazine and even Slate have told us the answer is 80 percent. If you repeat that number enough – as those publications and dozens of others have been doing – it still won't be true.

When diligent reporters first started using the 80 percent figure a few weeks ago, they were correctly adding qualifiers

such as “80 percent of the water used by humans” or “80 percent of the state’s developed water.” Now, most have gotten lazy; it’s just “80 percent.”

That number is wrong in so many ways. First, [50 percent](#) of all of California’s water is used for environmental purposes – staying in rivers, creating marshes and giving us a place to swim. In wet years, the environment gets [64 percent of all the water](#).

Of the remaining 50 percent, city dwellers use 10 to 12 percent. Farmers get what’s left, or about 40 percent of surface water.

But in wetter years, farmers don’t use all the water they get, leaving some behind dams in reserve for dry years. When it gets dry, though, farmers aren’t the only ones who want that water. So farmers are required to share what they have set aside in better years so that fish can swim, frogs can croak and we can water our lawns.

Add it all up, and it would be a rare year that farmers use even 40 percent of the state’s surface water – much less 80.

Ground zero for a fight

Journalists aren’t the only ones bad at math. Where farmers are flunking the math test is in their calculations about groundwater. Thousands upon thousands of acres of almond trees have been planted over the past few years in areas where there is no water – at least none you can see. Planting outside irrigation districts, these farmers are gambling on groundwater. Because of California’s antiquated laws governing our shared resource, many of those gambles are paying off. But for how long?

Many of those trees were planted by corporate growers who care little for anything except profits. With virtually every farmer in the state forced to pump groundwater this year, it is likely dozens if not hundreds of nearby residential wells will go dry – just as wells did last year.

While the state can tell us to stop watering our lawns and farmers to use less surface water, no one can tell these mega-pumpers to stop pumping. Groundwater use is virtually unregulated, at least until the groundwater law passed last year kicks in around 2025.

All this adds up to a difficult, dry and legally contentious year. Count on it.

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