

# ARE WE BETTER PREPARED FOR A DROUGHT?

## *MEMORIES OF 1977 HANG OVER STATE AS RAINFALL REMAINS ON VACATION*

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1977. It stood for decades as California's benchmark low-water year - the driest of the dry, the drought by which we judge all other droughts.

East of Stockton, New Hogan Lake shrank to 3 percent capacity. The Mokelumne River went dry near Thornton. Lawns were painted green and flower displays at one county fair were paper cutouts.

The California Highway Patrol reported an increase in car wrecks on country roads, as cows and horses escaped their dry pastures in a desperate search for forage.

There's a reason we never forgot 1977. It was our deepest, though not our longest, drought.

And as Stockton today reaches its 43rd consecutive day without measurable rainfall, comparisons are inevitable. When the drought declared Friday by Gov. Jerry Brown eventually ends, 1977 "just may look like the good old days," one water district chief warned ominously earlier this month.

Stockton is better prepared to deal with such a catastrophic drought today, and in some ways, so is the entire state.

Per capita water use has declined in California as low-flow toilets replace those 7-gallon guzzlers of old, among other water-saving improvements. And in the fields, many farmers have switched from flood irrigation to drip, using less water while still growing more crops.

The state has also added a modest 4 million acre-feet of water storage capacity, the majority as a result of the construction of New Melones Lake, which has become a significant source of water for Stockton.

And yet, we have 20 million more thirsty Californians than we did in 1977. And in San Joaquin County alone, more than 100,000 additional acres of orchards and vineyards have been planted. Unlike field crops, those trees cannot simply be fallowed during a water shortage.

Adding another new wrinkle for much of California, environmental regulations make moving water to distant portions of the state more difficult than in decades past. And scientists have since documented that climate change is causing more precipitation to fall as rain rather than snow, shrinking the amount of runoff that can be held back in reservoirs.

Taking all factors into account, some say we're better prepared to deal with a '77-style drought. And others say the opposite.

"Water conservation has been much improved, but the demand for water from my point of view has outstripped our efforts to conserve," said Scott Hudson, San Joaquin County's agricultural commissioner.

"I think we're in a more perilous situation this time around than we were back then," he said.

Mildly more optimistic was Maury Roos, a longtime hydrologist with the state Department of Water Resources. California has a little more storage today, and also has more water in those reservoirs than it did going into 1977. The extra padding is about 5 million acre-feet, he said, enough to fill New Melones twice.

But that cushion would go away quickly without snow and rain. Roos estimates a 1 in 4 chance that the state could recover enough to receive 80 percent its normal annual snowpack.

A surge above normal, he said, would be "almost unprecedented." Indeed, the latest long-term forecast from the National Weather Service predicts drier-than-normal conditions into the month of April.

In 1977, Stockton was coming off what was then its driest calendar year on record. The city was still heavily dependent on groundwater, and was only just beginning to receive water from a new treatment plant on the Calaveras River.

Today, after hundreds of millions of dollars spent by ratepayers, the city has the capability to receive water from all four major streams in its vicinity - the Calaveras, the Stanislaus, the Mokelumne and the San Joaquin.

"We are in a much better position than we've ever been before," said Bill Loyko, a longtime civic watchdog who serves on the city's Water Advisory Group. The most recent investment was a \$220 million drinking-water plant which allows the city to drink from the Delta for the first time.

River water has helped Stockton cut back on groundwater, which water managers say should be preserved as a kind of emergency savings account. Other communities in San Joaquin County have also improved their position with river flows.

Of course, people should still conserve water, particularly if the drought persists.

1977 saw serious, although largely voluntary, calls for conservation measures in much of San Joaquin County. And its citizens stepped up, saving anywhere from 20 percent to nearly 40 percent.

The most urgent shortages occurred not in cities but in smaller, rural communities. Copperopolis saw its water supply dwindle to a few thousand gallons before residents raised \$2,600 to drill a new well. The situation got so bad in little Escalon that ministers there organized a meeting to pray for rain.

With the exception of portions of Sacramento County, the latest drought also appears likely to hit smaller towns before it's noticed in large urban areas.

Los Angeles is said to have enough water to last at least until 2015. On the other hand, Willits, a Mendocino County timber town of less than 5,000 people, has only about 100 days of water left in storage.

Similarly, the hit to agriculture will vary greatly depending on the region. The South San Joaquin Irrigation District has senior rights along the Stanislaus River and stands to be in good shape, relatively speaking. But as is often the case during dry times, south San Joaquin Valley growers who depend heavily on the Delta are facing extreme shortages.

Overall, farmers are using less water, but the number of irrigated acres has increased by the thousands in the Valley over the past few years.

Land on the east side of the county that used to be open pasture has gradually shifted to irrigated crops, spreading the demand for water.

Farmers are also planting more lucrative tree and nut crops, as well as vineyards, all of which require at least some water to survive even during the worst of droughts. Those permanent crops in San Joaquin County have more than doubled since '77, from 113,358 acres then to 253,000 acres.

In short, there is more at stake than there was almost 40 years ago.

So the question becomes, did we learn from 1977, and from the drought of the late '80s, and from the most recent drought of 2007-09?

"We're better off in the sense that we know more," said Peter Gleick, president of the Oakland-based Pacific Institute. "We're not better off in the sense that we still have not done the truly fundamental things we have to do to reduce our vulnerability," including more aggressive conservation, water recycling projects and controversial measures such as monitoring groundwater use.

"They're controversial only until you have no other option, and then you do them," Gleick said.

Jeff Shields, general manager for the South San Joaquin Irrigation District, wrote a memo to his board suggesting that in the future, '77 may no longer be that benchmark year for drought.

Perhaps it'll be 2014.

"It is common for longtime residents in the Central Valley to say, 'I hope we never see anything like 1977 again,'" Shields wrote. "Unfortunately, we are indeed seeing it, and unless things improve those just may look like the good old days."

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### **Where we stand**

Cities have not made definite decisions about water conservation policies for this coming summer, but here's what they're saying right now:

- City of Stockton: No unusual restrictions. Standard water conservation rules in place.
- California Water Service Co.: No unusual restrictions. CalWater promotes voluntary 20 percent water conservation in both dry and wet years.
- Tracy: City is "well-prepared" for drought, but too early to determine level of conservation that will be required.
- Lodi: Normal water conservation ordinance in place, possibly with added enforcement.
- Manteca: Stands to receive less water from the Stanislaus River this year, but has groundwater to make up the difference. Regular water conservation rules in place with possible increase in enforcement.

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