

Valley's summer without water: 'How can they let this happen?'

By Mark Grossi

DINUBA — Growing up in Mexico, Maria Rodriguez remembers hauling water from a stream to the shack where her parents and their nine children lived. Indoor plumbing was not an option.

Decades later, she lives in a modest home, nestled amid lush peach orchards and vineyards in northern Tulare County. It is the dream she shared with the love of her life, Manuel, and their three children.

But her private well went dry in May. Suddenly, Maria, 64, is reliving her childhood, hauling water from barrels outside.

It's really not so bad, she says, living without a well for the summer. Her grown children bring her water. Her orange trees and succulents are dying, but Maria isn't going anywhere, she says in Spanish.

She glances at the small cross next to the driveway -- the spot where Manuel collapsed and died of a heart attack 10 years ago. This place is filled with meaning.

"I'm not leaving my home," she says.

She's not getting a new well soon, either. She can't afford the \$15,000, and the government has not been able to help. It's a familiar sad story this year in the San Joaquin Valley, one of the largest and most drought-impacted groundwater basins in the country.

For residents and farmers alike, this is the cruelest summer in memory for the nation's most productive farm belt. And for many, it provokes serious questions about public neglect of California groundwater.

Tens of thousands of people from Kern to Stanislaus counties daily live in fear of losing their wells. The most recent example: East Porterville, where nearly 290 homes went dry, leaving 1,000 residents with no water.

On an even larger scale, the \$37.5 billion ag industry is suffering economic mayhem from dry wells and lack of river water. Cropland with a footprint larger than Los Angeles has been left to tumbleweeds.

Those who can pump water to save their crops are doing it furiously. Some are drilling wells 2,000 feet deep or more on the Valley's west side.

For drilling companies, the summer is a blur of long days without a prayer of keeping up with demand. Some buy new equipment to drill deeper. Many are juggling the media -- every outlet from local television stations to National Geographic to The New York Times.

"I talked with '60 Minutes' out at a job in Pixley," says Steve Orum of Arthur and Orum Well Drilling Inc. in Fresno. "Lesley Stahl stepped out of a limo to interview me. This summer is different."

The water pumping creates grotesque changes in the ground, making parts of the landscape sink several inches in just a few months. Experts say roads will crack and buildings will lean. Canals and dams will lose some capacity to hold water as they sink.

Short of a storm bonanza this winter, easing this pain won't happen quickly -- nor will sorting out the right and wrong in this panic.

That's aggravating for people such as Chowchilla resident Jean Wilson, whose well went dry months ago.

She and others are asking tough questions about California, which has the eighth-biggest economy in the world and a \$2 trillion gross state product. How could leaders not anticipate the Third World-like calamity unfolding in the San Joaquin Valley?

Wilson fears the worst for some elderly residents who do not know what to do when their well goes dry.

"Sooner or later, you're going to find someone has died in their home without water," she says. "How can they let this happen?"

Biggest groundwater resource in state

Nobody knows how much groundwater overdrafting is going on. Nobody knows how many wells have been drilled. Nobody knows with any real precision how much water lies in the layers of soil underfoot.

California is one of the few states that has not regulated its underground water, but that appears to be changing.

A landmark groundwater law, known as the Sustainable Groundwater Act of 2014, was pushed through the Legislature in late August and now awaits Gov. Jerry Brown's signature.

Of the more than 400 groundwater basins in California, the law is pointed at 127 as high- or medium-priority targets for regulation. Many have overdraft and contamination problems.

None is larger than the Central Valley, the combined San Joaquin and Sacramento valleys. And the San Joaquin Valley is the heart of groundwater pumping in California.

No other area in the state even comes close in groundwater use.

"The amount of groundwater pumping in the Valley is among the highest in the country -- among the highest in the world," says Fresno engineer and water authority Ken Schmidt, who has worked on groundwater issues for more than four decades.

Schmidt says the overdraft is staggering, somewhere between 1 million and 2 million acre-feet of water a year.

An acre-foot is 326,000 gallons of water, which would last 12 to 18 months for an average Valley family. One million acre-feet would supply Fresno for eight years.

Without some regulation to share the underground water, farmers have been drilling deeper and deeper for water as wells go dry.

The new law should help to bring that under control, say legislators. But it will take five years just to come up with plans to manage groundwater basins in the state. That's a long wait for Maria Rodriguez, Jean Wilson or any resident with a dry well.

Meanwhile, some newly drilled farm wells are going dry in less than a month, drillers say. Farmers have no choice but to keep going deeper for water.

"It's a disaster out here," says Jim Schrack, owner of Schrack Drilling Co. in Selma.

Farm opposition to the new law

Groundwater law makes Valley farmer Ted Sheely nervous. Sheely moved to California from Arizona back in the 1970s, before Arizona passed a groundwater law. He said the regulation hurt his relatives who remained in Arizona.

"It started with metering water," Sheely says. "Then they taxed it. Soon, they were putting more money in state coffers that didn't necessarily go to groundwater protection. I don't know what the new law here will do, but you will

not like it. Nobody will."

Sheely monitors every drop of well water used on his 10,000-acre farm near Lemoore in the Westlands Water District. He installed stingy drip irrigation years ago. Farmers have to be conscientious about water, he says.

He and many in the agricultural community say the solution to the overdrafting of groundwater on the Valley's west side has been importing Northern California river water and turning off the well pumps.

But dying fish species have needed more of the river water in recent years. Three years of drought have made it worse. Farmers say only the groundwater is preventing a crippling meltdown.

"If these farms go away," Sheely says, "they won't be coming back."

The new groundwater law threatens water users who have little or no overdraft, say a group of 35 lawmakers, including the Valley's legislators. They wrote a letter urging Brown to veto three groundwater bills, Senate Bills 1168 and 1319 as well as Assembly Bill 1739. The legislators say they want to take another crack at this effort later this year.

The governor is expected to sign the bills into law anyway.

The bills would require regions to form their own groundwater agency by Jan. 1, 2017. Three years later, the agency would have to present the state with a plan to manage, restore and protect the groundwater.

Each plan would designate improvement targets every five years for 20 years.

What's the hammer for resisting or backsliding? The state eventually could step in and limit pumping. That doesn't go down well among farmers, but some growers and water leaders say it would give control to local entities.

"We would have the wheel of the ship," said Dave Orth, general manager of the Kings River Conservation District. "There doesn't have to be any state intervention."

Orth helped negotiate the language in the bills, but his district wound up opposing the legislation.

"People don't like the idea of possible state action or fees or extraction limits," he says. "Expect a lawsuit over this."

In Arizona, groundwater regulation isn't perfect, but it works, says University of Arizona law professor Robert Glennon.

He calls unregulated pumping in California a classic "tragedy of the commons," in which people acting rationally for their own self-interest deplete a common resource.

Glennon's latest book is called "Unquenchable: America's Water Crisis and What To Do About It." He says California needs the courage and political will to regulate groundwater.

"Right now, you have a right to pump water underneath your own land in California until someone comes along with a deeper well or a bigger motor and sucks the water from under your property," he says.

"It's an outrage."

Giant slush below

There is no big bath tub or lake underground. It's more like layers of an enormous slush filled with more water than every reservoir in California combined.

In fact, it's probably many times more water than reservoirs store altogether, hydrologists say.

The water table within the slush usually rises and falls with the seasons as pumping takes place in warm months and rain accumulates in cooler months, says Graham Fogg, a University of California at Davis professor and hydrogeologist for the last 40 years.

In general, groundwater is the biggest unseen treasure of water all over the globe.

"People are surprised to hear 95% of all the fresh water on Earth is in groundwater," he says.

"Why don't we just use it all? Because bad things happen as you overdraft. Pumping costs rise, the ground subsides and before you empty all the water, you find there is salt water at great depths."

For millions of years, rivers have swept out of the soaring Sierra Nevada, carrying sediment and snowmelt to deposit in the Valley's deep trough. These days, the sediments are thousands of feet deep in some places along the Valley, Fogg says.

The water soaks into the soil below and remains under pressure. Sink a well pipe, and the pressure forces water into it.

Rivers and streams are the source of the groundwater, Fogg says. In California, the river water is tracked relentlessly. Flows on most rivers are posted daily on the Internet. Arguments erupt over the smallest nuances.

By comparison, groundwater is a mystery.

"Think of it as two bank accounts, one for surface water and one for groundwater," says Fogg, who has long studied the Valley's underground water.

"The balance in the underground account is like a secret. You siphon from the surface account into this underground account. How can you manage it if you don't know what's there?"

The U.S. Geological Survey tracks the water table and the sinking landscape in some places around the Valley. Some wells show a 200-foot drop in the water table this summer.

Land subsidence is happening at a record pace in some parts of the Valley. USGS hydrologist Michelle Sneed says she is monitoring a section of land along the Delta Mendota Canal where the sinking has sped up.

"It was subsiding about a half inch a year from 2008 to 2010," she says. "It's about a half inch a month now."

The USGS documented a 28-foot decline in the ground around Mendota between 1925 and 1977. Federal scientists noted the sinking slowed as river water was imported from Northern California in the 1970s and 1980s.

River water and underground water must be considered together, not separately, says Fresno engineer Schmidt. The underground is a storage place, not a source of water, like a river or a stream.

"You have to look at the overall consumptive use of water," he says. "You need surface water as the source to balance the groundwater. The term for it is conjunctive use."

Life without water

In Tulare County, Maria Rodriguez's son, Jose, 39, rigged a 275-gallon tank and small, electric motor to pump water into her home through the plumbing that had been hooked up to the dry well.

"She uses it mostly to flush the toilets," says daughter Nydia Rodriguez-Karreras, 37, who works in Fresno. "I come by the house all the time to help her. We worry a lot about her."

They tried to secure money from the U.S. Department of Agriculture to help her replace or redrill the well, but she

didn't qualify. The federal money can't be used for wells in places zoned for agriculture, the rejection letter says.

Nydia says her mom lives about a mile outside the Dinuba city limit, close enough to hope for city water but far enough to prevent her from getting it anytime soon.

"We're here in the United States -- in California," Nydia says. "You shouldn't have to go without water here."

In Chowchilla, Jean Wilson, 63, and her husband, Garland, 71, have decided to forget about a well.

They bought tanks that hold 4,000 gallons of water, hooked them to the plumbing and installed an electric pump. It lasts a couple of months, Jean says.

They pay about \$425 for water hauled by truck from Fresno. A new well would cost between \$20,000 and \$40,000, according to estimates she received.

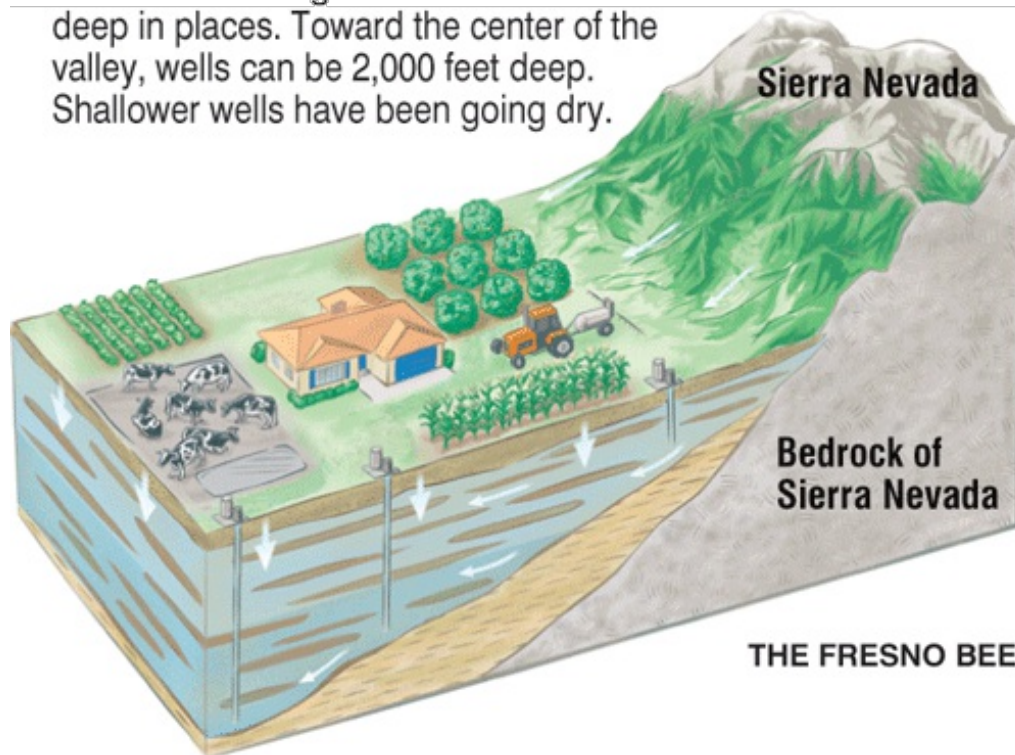
"Do we have a lawn? No," she says. "We have a couple of bushes we like, so we throw our dishwater on them. Believe me, we know how to conserve."

When they sell their home, maybe the next owner will want to drill a well, she says.

"We're talking about leaving California now," Jean says. "People fled the Dust Bowl and came to California in the 1930s. Now I think we need to go the other direction."

Underground water

For millions of years, snowmelt from the Sierra Nevada has flowed into the Valley, filling rivers and seeping underground. Sediment washing down from the mountains is several miles deep in places. Toward the center of the valley, wells can be 2,000 feet deep. Shallower wells have been going dry.



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