

DELTA IN DECLINE: PART 2

Water quality can be hard to swallow

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Kent Nelson swirls the liquid in the glass, smells it carefully and takes a sip. He swishes it around a bit and pronounces that he has detected a whiff of chlorine with just a hint of an earthy flavor.

"Just a little bit of an undertone," he says.

This isn't a goblet of bad cabernet.

It is a beaker of Delta water, a small taste of the most important -- and most troubled -- water source in the state.

The Delta supplies at least some water to two-thirds of Californians, one-tenth of the entire nation, and overall accounts for about 25 percent of the state's water supply.

But nowhere is more attention focused on what is in Delta water than at the Contra Costa Water District, which is unique in that its 500,000 customers get all of their water from the Sacramento-San Joaquin River Delta.

Delta water contains sea salts, algae and dissolved organic matter, which tasters like Nelson pick up in odors they describe with words like "musty" or "marshy."

When the CalFed agreement was signed in 2000, one of its four main goals was to improve the quality of the Delta's water.

That hasn't happened.

"In terms of getting projects on the ground, it's been a failure," said Contra Costa Water District assistant general manager Greg Gartrell.

The district says its water quality is now worse than it was 10 years ago, when some of CalFed's earliest water management changes went into effect, along with other measures that were meant to protect Delta fish.

CalFed spokesman Keith Coolidge did not disagree.

"Admittedly, we are behind on water quality," Coolidge said.

The water is still safe to drink, even if it tastes funny at times.

But poor water quality also raises the possibility of health problems. Seawater entering the Delta contains bromide, a salt that can create hazardous byproducts when the water is disinfected to kill bacteria to make it safe for drinking. And organic matter in the Delta's soils seeps into the water and can create similarly hazardous byproducts, called trihalomethanes.

Contra Costa and other water districts are cutting their use of chlorine to minimize formation of trihalomethanes, but they cannot entirely eliminate them.

Ten years ago, in an attempt to protect migrating salmon and spawning Delta smelt, water managers shifted much of the pumping from high flows in the spring to later in the year.

As a result, Contra Costa Water District officials say Delta water is now saltier in the fall, a critical time of year because that is normally when the Delta is at its saltiest.

In the Delta, bromide is 6.5 times higher than the national average. And dissolved solids are 50 percent higher than the national average for drinking water sources, according to the water district.

And yet, today no regulations exist to keep the Delta safe for drinking water, Gartrell said.

The only drinking water standard in the Delta is designed nominally to keep people from gagging.

Instead, water quality standards that predate CalFed focus on protecting fish and farms.

A new policy to guide drinking water decisions in the Delta is being pursued, and new standards could be developed as part of that.

Like canaries in a coal mine, taste testers for the district provide an early warning for potential water quality problems. Treatment is varied depending on what odors are detected, stemming from algae, decaying vegetation, disinfection products or other contaminants in the water.

But it's not just salty or earthy-tasting water at stake. CalFed's inattention to water quality may also have prevented the program from detecting -- even predicting -- the three-year collapse in Delta fish populations confirmed early this year.

The water district recently developed an analysis that shows a strong statistical relationship between salinity in the west Delta during the fall and the health of Delta smelt populations the following year.

"That should have been done 10 year ago (by CalFed or another state agency)," Gartrell said. "The bells would have gone off" earlier to alert officials of the fish collapse.

No one knows for sure what is driving the relationship between salinity and Delta smelt populations, although one strong theory is that a salty Delta is better habitat for the overbite clam, which is capable of removing the tiny food organisms that smelt and other small fish need.

A saltier Delta could mean more clams and less food for the fish.

Another possibility is that the saltier water is encouraging the fish to swim upstream, where they are more likely to stray into the pumps' flows or be exposed to pesticides in farm runoff.

Meanwhile, Nelson and three others dressed in lab coats gather each week in a conference room at the Ralph D. Bollman Water Treatment Plant in Concord to gauge water quality for those who rely on fresh -- and clean -- drinking water coming out of their tap on demand.

On the table before each of these trained taste testers are six small beakers of water -- some straight out of the Delta, others out of somebody's kitchen faucet in the Contra Costa district.

In addition, each has a large beaker of deionized water, which is odorless and tasteless to bring their noses and taste buds back to zero.

Finally, each tester has three Styrofoam cups filled with sugar water from slightly sweet to strongly sweet that they use to calibrate their senses so they can more accurately record how earthy, musty or fishy the water smells or tastes. Other tastes and odors they might pick up include marshy-swampy, tule, chlorine and flowery-fruity.

Each odor or taste that is detected in Delta water is assigned a number from zero to four to indicate its intensity.

"I gave it a tule two, musty one," said taster Jean Zacher.

"I got a tule three. I thought it was very strong," said Nelson

Los Vaqueros Reservoir

(Contra Costa Water District)

Capacity: 100,000 acre-feet



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