

California drought: Central Valley farmland on its last legs

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Jack Mitchell sold about 3,000 acres of his Tulare County ranch a decade ago to federal officials trying to find out whether imperiled farmland could be returned to nature. Studies point to the need to retire more acreage. Photo: Michael Short, The Chronicle

Even before the drought, the southern San Joaquin Valley was in big trouble.

Decades of irrigation have leached salts and toxic minerals from the soil that have nowhere to go, threatening crops and wildlife. Aquifers are being drained at an alarming pace. More than 95 percent of the area's native habitat has been destroyed by cultivation or urban expansion, leaving more endangered bird, mammal and other species in the southern San Joaquin than anywhere in the continental U.S.

Federal studies long ago concluded that the only sensible solution is to retire hundreds of thousands of acres of farmland. Some farming interests have reached the same conclusion, even

as they publicly blamed an endangered minnow to the north, known as the delta smelt, for the water restrictions that have forced them to fallow their fields.

The 600,000-acre Westlands Water District, representing farmers on the west side of the valley, has already removed tens of thousands of acres from irrigation and proposed converting damaged cropland to solar farms.

Many experts said if farmers don't retire the land, nature eventually will do it for them.

"We can make the decision now, when we actually have the choice about how to rationally back out of that bad situation and make landowners whole," said [Jon Rosenfield](#), a conservation biologist for the [Bay Institute](#), an environmental group. "Or we can just wait until the worst is upon us, we've driven the species extinct, we've plowed under the last bit of naturalized landscape in the area, and then we're going to retire these lands anyway."

Test restoration

More than a decade ago, [Jack Mitchell](#), now 74, sold 3,000 acres of his irrigated land to federal officials trying to find out whether imperiled farmland could be reclaimed by the native plants, birds, mammals and other wildlife that once thrived in the San Joaquin Valley. [Mitchell's](#) farm was on the site of the old Tulare Lake, once the largest freshwater lake west of the Mississippi, covering 800 square miles and yielding 3-foot trout. It went dry in the early 20th century as farmers began diverting water.

Mitchell had grown cotton and other row crops since his father bought the farm in 1946. But water was getting scarce and expensive, the drainage was terrible, and the government was offering a buyout. "We could see the writing on the wall," Mitchell said.

The experimental plot, called Atwell Island, covers about 8,000 acres in Tulare County. For more than a decade there and at a smaller site to the north in Fresno County called Tranquillity, federal land agents and university scientists experimented with restoring native plants and animals. The program was authorized by the Central Valley Project Improvement Act of 1992, the brainchild of Rep. [George Miller](#), D-Martinez.

No one really knew how to restore old farmland that had been cleared, cultivated and doused in fertilizers and herbicides. The land and hundreds of thousands of acres like it is perched atop an impermeable layer known as the Corcoran clay, trapping irrigation drain water that leaches salt, boron, selenium and other naturally occurring minerals from the soil.

Restoration was difficult and expensive, costing roughly \$1,500 an acre. But native plants began to establish, birds arrived in abundance, and mammals started to colonize.

The program will all but close down next year. The government abandoned plans to buy out more farmers and funding has dried up, even as biologists say the need is desperate.

Drought, degradation

"The sad fact of the matter is that everybody knows the plight of many of these species," said [Patrick Kelly](#), a zoologist at [California State University Stanislaus](#) who worked on the plots. Endangered animals and plants found at the sites, he said, range "from the blunt-nosed leopard lizard, a very magnificent large lizard that is only above ground for about six months of the year at most, to the San Joaquin kit fox, one of most beautiful canines in North America, to various species of kangaroo rats and various types of flowers like the California jewel flower."

The drought is taking a terrible toll on all of them, Kelly said, but the main reason for their predicament is "a loss and fragmentation and degradation of habitat."

The San Joaquin Valley is an ancient seabed arid enough to be classified as desert but irrigated by a huge complex of dams and canals. Large swaths of it have serious drainage problems, including more than 1.75 million acres of farmland, according to a 2005 federal report.

Much of the problem land lies on the valley's west side, represented primarily by Westlands. More than half its acreage has been classified as drainage-impaired.

In 2006, the [U.S. Fish and Wildlife Service](#) said that despite hundreds of millions of federal dollars spent over two decades, no technological solution had been found to dispose of drain water. Enormous amounts of salt and selenium - toxic to birds, other wildlife and humans at high concentrations - continue to accumulate each year.

Kesterson disaster

Proposals have included a drain to carry the water to the Sacramento-San Joaquin River Delta. It was partly built but was shut down after the drain water killed and deformed thousands of internationally protected migratory birds in a 1983 disaster at the Kesterson National Wildlife Refuge.

Another plan, since scrapped, was to build a giant drain over the coastal range to Morro Bay in San Luis Obispo County. Other plans include concentrating the drain water in thousands of acres of evaporation ponds, which federal officials have warned would pose a lethal threat to wildlife.

The Fish and Wildlife Service concluded that the best solution is to "remove the fundamental underlying source of the problem" by retiring 379,000 acres of land from irrigation.

In 2008, the U.S. Geological Survey warned that within 50 years, 20 million tons of contaminated salt will have to be disposed of. The agency said experimental technologies are "unprecedented and untested at the scale needed" and that the "potential release of selenium-contaminated drainage is massive." The agency concluded that the best solution would be to retire 300,000 acres in the western San Joaquin Valley.

Westlands retirements

In 2001, the Westlands Water District was in negotiations with the [U.S. Bureau of Reclamation](#) to retire 200,000 acres of land in exchange for a guaranteed water supply from the federally run

Central Valley Project. Westlands issued a paper titled "Why Land Retirement Makes Sense for Westlands Water District," saying the west side of the valley is "severely affected" by drainage problems.

Westlands manager Tom Birmingham, who did not respond to requests for an interview, wrote an opinion piece in 2002 touting the benefits of land retirement as "significant."

The paper has been removed from the Westlands website and nothing came of the negotiations. Thousands of Westlands acres have already been retired in various legal settlements with the federal government, which is obligated by Congress to provide drainage for farms in the district.

Westlands spokeswoman [Gayle Holman](#) put the tally at 88,000 acres, some converted to sheep grazing or dry-land farming, a low-yield method that relies on seasonal rains.

"Our goal is to continue farming the land," Holman said. "We have some of the best land in the world."

Right to farm

Holman called suggestions of land retirement "a little unsettling. ... Growers have an opportunity and a right to farm just as much as anyone else, regardless of area. There's a viable need for it and a product produced that quite frankly feeds the nation."

The district now has on its website a proposal for a "Westlands Solar Park" to build solar power panels on 24,000 acres of farmland.

In some areas of the valley, salt has crystallized on the surface, covering fields with what is known as "California snow," rendering the ground useless not just for crops but also for any vegetation at all.

Retiring lands before they reach that point "has just got to be the highest priority for California," said Tom Stokely, a water policy analyst for California Water Impact Network, an environmental group. "We don't have the water to be irrigating these poisoned lands. We're having a hard enough time keeping the good lands in production."

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