

California: "Water Is Gold"

San Diego, CA—A veritable Garden of Eden sweeps east across southern California. Immense farms are irrigated. (The *San Diego Union* reports, "Irrigated pasture alone uses about as much water each year as the state's entire urban population.") Bulldozers and developers have created modern homes, rich green lawns, glowing flower beds and private swimming pools. A vital question: Where is the water coming from?

The *Christian Science Monitor* points out. "In California, gold is no longer gold; water is. Water is a limited resource in the West, people are not. Millions and millions of people are using too much of the water nature provides. . . . A Federal water policy subsidizes water for major corporate farms in California. . . . And there are too many people with cars, freeways, houses, farms and swimming pools."

A state legislator comments, "We have a water supply that's designed to serve 17 million people, and we have 30 million people, growing 3 percent a year."

This is a problem all over the world: Too many people are using up the limited reserves of fresh water. In the U.S., potable water is being contaminated by chemical runoffs from factories and farms, reports the Natural Resources Defense Council. The Geological Survey found herbicides in 90 percent of the streams tested in 10 Midwest states in 1989. And a recent EPA survey estimates that 1.3 million Americans are drinking water from rural wells contaminated with pesticides.

Governor Pete Wilson warns that five years of drought in southern California and last winter's record freeze have produced a tinderbox that could bring the "granddaddy of all fire seasons."

Yet there is hope. The state, cities and towns are looking at ways to increase the water supply—by removing salt from sea water and by conserving water.

One farmer leading the way is Lee Simpson of Fresno. He equipped his vineyards with "high-tech drip irrigation, tubes with tiny holes that put water exactly where it is needed. First, he installed the system aboveground, then he sank it down near his plants' roots for greater efficiency. He hooked it up with an interactive computer system. Lee Simpson is growing twice the raisin grapes on half the water." (*Los Angeles Times*)

THIRSTY SAN DIEGO COUNTY—The water problem is acute in San Diego County, the fastest-growing metropolitan area in the U.S., and one of the thirstiest. It has little groundwater and buys water imported, in part, from the giant Colorado River and snowmelt from the Sierra

mountains. The reservoirs were 15 percent of capacity even after the heavy March rains.

Much of California is a natural desert. Less than 100 years ago, many maps showed the area as part of "the great American desert." Today, the demands of a growing population and giant farms threaten a return of the desert.

The *Los Angeles Times* states: "Even in years of normal rain and snowfall, California's ability to provide the people with all the water they want has been undercut by a soaring population, a political impasse and a lack of new water facilities. . . ."

"Recent state surveys indicate that in future dry years, California will fall an estimated 1.5 million acre-feet of water short of demand, or twice as much water as the city

The Dry West

"Thanks in part to the rain shadow effect of the mountains, most of the West is dry. It is either steppe (a semiarid climate that can support short grass) or full-fledged desert. With minor exceptions, it is too dry to farm without irrigation.

"A good many homesteaders discovered that the hard way. You can still see their decaying cabins dotting the landscape."

—*The NPG Forum*

of Los Angeles now consumes annually. The deficit would be worse if there were another multi-year drought."

MORE DROUGHT INDICATED—Tree-ring studies show that California has had long periods of drought, sometimes followed by wet years. The state "endured seven consecutive drought years ending in 1934, when its population was one-fifth of the current 30.3 million. Other severe droughts occurred in the 1940s and 1970s." (*Washington Post*)

Another problem in the offing is that the Metropolitan Water District's share of Colorado River water has been cut in half, in order to satisfy Arizona's demands. And tougher water-quality standards in the Sacramento-San Joaquin Delta have "limited the potential for additional shipments to the south by the State Water Project.

"Meanwhile, people continue to stream into southern California and statewide, accelerating population growth. This has further diminished the state's ability to provide water to all who request it." (*Los Angeles Times*)

The long, searing drought has brought on a serious,

sometimes acid debate between city dwellers and farmers. Eighty-five percent of water used in California goes to farms, and some of that is lost to evaporation from irrigation canals and sprinklers.

The tone of the debate is reflected in an editorial in the *Redding Record & Searchlight*: "For too long, huge corporate farms have been able to skirt Federal limits on low-cost, taxpayer-subsidized water. For too long, agricultural corporations have gotten away with 'double dipping' on both crop and water subsidies. . . .

"Domestic users can limit toilet-flushing and lawn-watering all they want, but the fact is that conservation steps are of little consequence. There is a veritable tidal wave of water allocated to agriculture—to the detriment of other important needs.

"More than half of all the water used in the state is consumed by dairy, rice and cotton farmers—all of whom are heavily subsidized."

As an example, "To make cotton-growing possible in the great central desert [of the San Joaquin Valley], the Federal Central Valley Water Project brings more than 350 billion gallons of water annually to the Westlands district at a fraction of the cost paid by urban residents and industries." (*Environmental Action*) Cotton sucks up nearly 900,000 gallons of water an acre.

The *Los Angeles Times* asks a question heard throughout the state: "Does rice, which loses more water by evaporation than Los Angeles uses in a year, have a place any more in a state of 30 million people? The case against rice, in its simplest form, is this: it drains too much water from the same reservoirs that supply most of California cities, for a crop less valuable to the state's economy than turkeys or broccoli.

"Cotton, pasture and alfalfa take more water each year than rice. But rice is the only crop raised on fields flooded with water. . . ." California is America's No. 2 rice state, thanks to virtually free water for rice farmers. The \$253 million rice crop requires four inches of standing water all season long. Thirty percent of the rice crop is exported, much of it to Asia.

BASIC FARM FACTS—The *Los Angeles Times* reports that the "average net worth" of California farmers "exceeds \$690,000." In 1988, California farmers "ranked first in revenue, with \$16.6 billion."

The Reclamation Act placed a 160-acre limit on farmers who receive Federal water at low cost. This was raised to 960 acres in 1982. However, the General Accounting Office claims that even this generous limit has been evaded by what the *Christian Science Monitor* calls "paper farms, sometimes held in trust by hundreds of company employees to get around the restrictions."

Farmers using the massive Central Valley Project "pay as little as \$3.50 an acre-foot of water, or 325,000 gallons," reports the *Monitor*. This is in contrast to the \$230 an acre-foot paid by the Metropolitan Water District of Southern California for domestic water.

George Miller (D-CA), chairman of the House Interior Committee, states, "We need to question whether we can afford to make water available at highly subsidized prices to grow low-value crops on marginal land."

Farmers could save water by switching to drip irrigation,

by raising crops that require less water, and by developing other conservation techniques.

Pesticides used by farmers contaminate some drinking water, according to *Public Citizen*. It reports, "More than 50,000 Americans have become acutely ill from drinking groundwater contaminated by bacteria, according to EPA statistics." The pesticides have been "implicated in chronic illnesses such as cancer, Parkinson's disease, and liver and lung damage."

Many wells in Fresno, the source of drinking water for 350,000, are contaminated with a pesticide known as DBCP. Some 20 other California municipalities must deal with the same problem in varying degrees.

THE FARMERS' REPLY—Rice farmer Don Murphy says, "You can't keep the cities thriving if the means of production dry up." (Rice and cotton alone accounted for more than 90 percent of the \$372 million in crop subsidies received by California farmers in 1989.)

Doug McGeoghegan, manager of a 2,300-acre rice farm, adds, "You put three feet of water on an acre of rice in California, you're going to get 9,000 pounds of a nutritious food. Put that water on lawns, what will you get?"

"Ninety percent of the world's population eats rice," states Bill Huffman of Farmers' Rice Cooperative. "They don't eat garlic or cherries. . . . Everybody's looking to gore somebody else's ox; it's as simple as that."

Many farmers have contempt for city dwellers' use of precious water for swimming pools and other luxuries.

SALT-WATER INTRUSION—Farmers on Sherman Island, between the Sacramento and San Joaquin rivers, once thought theirs was some of the world's most fertile farmland. But use of the land has been lost "because of damage from salt water in the delta," reports the *Times*. One farmer says he used to average 5.5 tons per acre of corn, but

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now we can't grow corn because it is a salt-sensitive crop. We've completely zeroed out in production."

Conservation and salt removal are two ways to provide enough water for both farms and cities. *The National Geographic* states, "Reformers point to Tucson, Arizona, as a good example of a desert city that today supports growth by conserving and reusing water. City ordinances require low-flow toilets, shower heads and faucets, and the city has even shared the cost of more efficient toilets for older homes. Many golf courses and parks are watered with treated sewage effluent.

"On a per capita basis, Tucson now consumes about half the water of Las Vegas, where conservation is still voluntary."

The *Los Angeles Times* reports: "Engineers are taking second looks at the technology for taking the salt out of sea water to give at least some Californians a water supply they could count on in dry years. Desalination has supplied fresh water for millions in the Middle East and elsewhere for many years.

"Now the drought, coupled with the incredible cost of—and environmental problems with—new dams and aqueducts, make such plants seem suddenly more attractive for California, even at premium prices. . . .

"Santa Barbara expects a plant to start producing a third of its water by summer 1992. The Metropolitan Water District will build a pilot plant and then a full-scale desalination facility in the San Diego area in a few years."

COST FACTORS—Water from the Santa Barbara plant will cost \$1,000 an acre-foot and add about \$20 a month to individual water bills. The Metropolitan Water District believes it can produce fresh water for \$500 an acre-foot, a little more than twice the cost of water now imported from the Colorado River and the Sacramento Delta.

Bechtel Corporation, which has built desalination plants in the Middle East, is considering building one in the Tijuana area that would produce 100 million gallons of water a day.

Another problem is the vast amount of property needed for a desalination plant. One being built on the Persian Gulf will cover 100 acres of coastal property. The *Los Angeles Times* comments that "most places between Long Beach and San Diego would want to think twice about a project that big, except when all else has failed."

Three other possibilities are being considered:

- The use of recycled water for such secondary uses as watering lawns, washing cars and doing laundry. One way to recycle water is to cool steam emitted from boilers at factories and power plants.

- A legislative act to curb the flow of immigration to southern California from Central America. There are 2,000 new residents coming into the state every day. A University of Texas expert says, "If the population and water consumption continue to grow, there will be a water shortage from El Paso to San Diego."

- A public education campaign to teach residents conservation techniques. Unfortunately, local officials have not set a good example. The *Christian Science Monitor* states that San Diego Mayor Maureen O'Connor's "daily water use averaged 3,248 gallons last year. The average San Diego single-family home uses 349 gallons." The Mayor lives "on a two-acre wooded area with an irrigation sys-

tem." California Governor Pete Wilson, "living in an upper-class mansion free of charge, used 11,170 gallons a day." He lives in a 3,200-square-foot home with his wife and no children, according to the *Monitor*.

WORLD WATER PROBLEMS—California's water problem is not unique. Water and food shortages are a possibility in many areas of the world, a report by Worldwatch Institute suggests. The expansion of irrigated farming, accounting for a third of the world's harvests, has been slowed by the rising cost of irrigation. This comes at a time when world population is growing at a rate of 2 percent annually. "This raises a red flag for the food supply," says Worldwatch spokesperson Sandra Postel.

The Worldwatch study suggests that 60 percent of irrigation water around the world is wasted "because of poor management and inadequate systems for preventing runoff, seepage and evaporation." (*Washington Post*)

WATER AND WAR—The Middle East has a serious water problem. Egypt's minister of state for foreign affairs, Boutros Ghali, says, "The next war in our region will be over the waters of the Nile, not politics." Israel's Meir Ben Meir, former head of the agriculture ministry, states, "If the people of the region are not clever enough to discuss . . . the problem of water scarcity, war is unavoidable."

The *Washington Post* sizes up the problem: "Three river basins form the backbone of water development efforts: the Jordan, the Tigris-Euphrates and the Nile. Supplies are nearly stretched to the limit in two of the three, and contentious political relations have thwarted efforts to reach water-sharing agreements. Yet the region has some of the highest population growth rates in the world and a climate that makes food production heavily dependent on irrigation."

Even England, famous for its lush green fields, is worried. There has been a "depletion of underground water supplies," with aquifers "at record lows," reports *The Economist*. With the cost of water rising, "the water charge will become the most significant property tax for single householders."

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