Big Ag Is Draining California Dry

The American West is facing a water crisis, compounded by climate change, a history of bad policy, and a refusal to stand up to Big Agribusiness. Despite a wet winter in early 2023 providing a short-term respite, a long-term megadrought persists across the region, as groundwater storage is being depleted after decades of over-withdrawals.[1] Corporate farms remain unphased by this fact, continuing to drain California's dwindling water supplies for enormous tree nut groves, and to prop up factory farms that, in turn, worsen the climate crisis and associated cycle of drought and flooding. The West is ground zero for Big Ag's assault on our water and climate future, and states must halt the expansion of these mega-farms and reallocate water for truly beneficial uses.

Bad Policy Threatens Colorado River Supplies

The Colorado River is one of the most regulated rivers in the world, due in no small part to its famous interstate water agreement: the Colorado River Compact.[2] Established in 1922, the Compact theoretically distributes 16 million acre-feet of water annually to seven states and Mexico. The Upper Basin states of Colorado, New Mexico, Utah, and Wyoming are obligated to deliver 7.5 million acre-feet to the Lower Basin states of Arizona, California, and Nevada, and the Upper Basin can only take its shares from what remains.[3] California receives around 30 percent of the Colorado River's allocations, equaling 4.4 million acre-feet.[4]

The Colorado River Compact formed during a period of abnormally wet rainfall, resulting in an agreement that allocated 15 million acre-feet annually between the states. Yet in recent decades, only 12 to 13 million acre-feet have flowed through the river each year, further exacerbated by a treaty guaranteeing Mexico 1.5 million acre-feet.[5] The Compact relies on fixed numbers, leaving little room for declining supplies and potentially leaving Upper Basin states unable to fulfil their obligations to the Lower Basin.[6] Reservoirs along the Colorado River have reached record lows in the past few years, forcing the U.S. Bureau of Reclamation to begin curbing supplies to Lower Basin states.[7]

California, unlike its fellow Lower Basin states, has been protected from federally mandated cuts due to its seniority status. Western water laws often dictate that those first in time are first in right; California has the most senior state claims to water in times of shortages, thereby avoiding cuts. This has put it at odds with the other Basin states, fracturing agreements to voluntarily reduce water use.[8] But in May 2023, following months of dispute, Lower Basin states came to a tentative agreement promising voluntary reductions of 3 million acre-feet by 2026 across the three states.

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Reductions come with a call for the federal government to pay out $1.2 billion to irrigation districts, cities, and American Indian tribes for their temporary water reduction.[9]

For California, this is a better proposal than what may have emerged from federal cuts. The immediate effects will be minimal for southern California, with a wet winter boosting reservoir storage for the moment.[10] But no one should begin to get comfortable. The Lower Basin's agreement only lasts until 2026 and is nowhere near the scale needed to address this long-term climate change-fueled crisis. According to experts, the Basin states need to cut four times as much annually for the reservoirs to recover.[11]

Growing Water Scarcity in California

California is experiencing climate change alongside the rest of the West, but it faces particularly severe impacts in the areas most dependent on the Colorado River. Imperial County, for instance, is the hottest county in the state and the fourth hottest nationwide, projected to have 102 days with a real temperature feel of more than 100 degrees Fahrenheit in 2023.[12] Hotter conditions require increased irrigation water, a dangerous situation for a county that is pulling all its water from the drying Colorado River.[13]

California relies on a complex system of dams and canals to transport water from the wetter, snowier northern and mountainous parts of the state to the southern, semi-arid region — which is also home to large urban areas and industrial agricultural production.[14] For example, massive water infrastructure projects such as the State Water Project and the Central Valley Project distribute surface water from the Sacramento-San Joaquin Delta throughout the state.[15] Southern California also receives water from the Colorado River via Lake Havasu and the Colorado River Aqueduct.[16] But these massive diversions and complicated systems of allocation have proven to be band-aid solutions for a dry state with limited water supply.

Alfalfa Production Abuses California's Dwindling Supplies

California uses more Colorado River water than any state and has enjoyed its senior water rights, while Arizona and Nevada suffered all the cuts from the prior shortage declarations.[17] Of the 40 million people reliant on the Colorado for household water, nearly half reside in southern California.[18] Even so, this is just a small portion of California's Colorado River allocation. Southern California's Imperial Irrigation District is legally entitled to nearly 80 percent and is the single largest user of Colorado River water. Each year, the district draws more water from the Colorado River than do the entire states of Arizona and Nevada combined[19] — enough to cover more than 550 Central Parks in five feet of water.[20]

The 400 farms receiving this water use some on vegetable crops such as lettuce and broccoli, but a significant portion is likely used to irrigate hay that supplies feed to beef and dairy operations.[21] Food & Water Watch estimates that the Imperial Valley's 164,000 acres of alfalfa harvested in 2017 required more than 197 billion gallons of water to produce, or 14 percent of California's entire Colorado River allocation.[22] Statewide in 2022, alfalfa water use jumped to an estimated 555 billion gallons, nearly 40 percent of the state's allocation. While some of this water came from sources other than the Colorado River, it is still a sizable amount — enough to supply Los Angeles and San Diego with enough indoor household water for seven years.[23] This is all consumptive use, defined

as water that is lost through evaporation or transpiration and unavailable for future reuse, as opposed to withdrawals that may flow back into the ecosystem through runoff from irrigation.[24]

Alfalfa prices hit record highs in 2022, motivating farmers to continue producing the crop despite its heavy water toll[25] — especially those holding senior water rights who continue to receive their full allocations.[26] While some family-scale farms produce alfalfa, the industry is dominated by massive farms, the largest 6 percent of which (each with 1,000 acres or more) harvest more than a third of the total irrigated acres of alfalfa. Four farms collectively own more than 30,000 irrigated acres of alfalfa.[27] The trend in the Imperial Valley is similar, with more than a third of its farms standing at more than 1,000 acres each.[28] In 2020, California exported 35 percent of its hay (which includes alfalfa), making it the state's twelfth most valuable export, generating hundreds of millions in revenue for large landowners.[29]

Foreign Companies Ship California's Water Overseas

Some of these mega-farms are corporate owned, including by foreign entities. Among these are several Middle Eastern companies farming alfalfa to ship abroad, since it is banned in places such as Saudi Arabia in attempts to conserve precious water resources amid arid climates.[30] This flow of water used to produce goods that are then exported around the world is known as virtual water trading.[31]

For example, the Saudi Arabian Almarai Company and its subsidiary Fondomonte owns 15,000 acres of cropland and massive storehouses in southern California, growing and exporting alfalfa back to Saudi Arabia to feed dairy cows.[32] A second player, the United Arab Emirates company Al Dahra ACX, is the self-proclaimed number one forage exporter in the U.S., farming alfalfa and other crops in southern California and Arizona.[33] Al Dahra ACX leases 4,700 acres in Palo Verde Valley and owns 2,600 acres in the Imperial Valley.[34]

California's patchwork water rights system has proven to favor agribusinesses that grow lucrative, water-intensive crops while wells run dry. Virtual water trading is not unique to foreign-held companies — it is the product of a heavily consolidated, corporate agriculture system, and highlights the need for California to reimagine its support for water-intensive agriculture in a region vulnerable to prolonged drought.[35]

Thirsty Nut Crops Drain California Dry

California is a hotspot for permanent tree crops like almonds, producing 82 percent of the global total.[36] Permanent crops such as almonds, pistachios, and other nut orchards must be watered year-round, which is becoming increasingly difficult with limited water resources.[37] Tree nuts like these accounted for 20 percent of California's agricultural water usage in 2013.[38]

Despite dwindling water supplies and years of intense droughts,[39] thirsty almond acreage in California has increased steadily since the 1990s. Almond acreage increased by nearly 78 percent from 2010 to 2022, undeterred by the 2012 to 2016 drought.[40] Almond- and pistachio-bearing acres in 2021 required an estimated 523 billion more gallons of water for irrigation than bearing acres did in 2017. Food & Water Watch estimates that the increase in water consumed by this nut crop expansion over the four-year period is enough to supply 34 million people (87 percent of California's population) with their recommended indoor water needs for an entire year.[41]

Mega-Dairies Threaten California's Water Security

On top of this, Food & Water Watch estimates that California's 1.7 million cows living on mega-dairies[a] use an estimated 142 million gallons of water each day for hydration and washing — more than enough to meet the indoor water needs of every resident of San Diego, San Jose and San Francisco combined.[42] Recent mega-dairy expansion comes at the expense of smaller, family-scale dairies. From 1997 to 2017, California lost 60 percent of its family-scale dairies. California has more cows living on mega-dairies than any other state — three times as many as the number two state, Idaho.[43]

Conclusion

Factory farm water abuses are endangering communities and ecosystems across California, creating scarcity and crisis in its wake. With accelerating climate change, we face a future of drier conditions punctuated by extreme precipitation and flooding. The state must therefore radically transform how it thinks about industrial agriculture's water use and rapidly scale back alfalfa, pecan, and mega-dairy operations. One way to achieve this goal is to strip alfalfa of its protected beneficial use status, thereby removing much of its water allocations.[44] California is beyond easy solutions and must be willing to take bold action to secure a safe and livable future.

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a In this piece, mega-dairies refer to operations with 500 or more cows, as this corresponds with data categories in the 2017 U.S. Department of Agriculture Census of Agriculture, which does not provide information on confinement and waste management.

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