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# Big Ag, Big Oil and California's Big Water Problem

As California suffers through a historic climate change-accelerated megadrought and dwindling freshwater supply,[1] the state has an opportunity to revamp how it manages its water resources to better serve its people.

But right now, arcane allocation of water rights, lack of transparency, deferred groundwater regulation and corporate influence contribute to the misallocation of California's limited water at the expense of small farmers, well users, and rural and Indigenous communities. Large almond farms, alfalfa farms that have expanded through land grabs, mega-dairy operations, oil and gas operations, and water bottling operations are just five examples of how the state has misappropriated public water.

Current systems of water management allow California water to flow overseas in the form of exports, returning massive profits for corporations. California officials must limit the misuse of water by industry for profit and better manage all water as a public trust resource.

The governor, state legislature and California congressional delegation need to act to protect California's water and to guarantee this resource as a human right, not a commodity controlled by corporations.

## Key Findings

- Large agribusinesses and oil and gas operators use massive and unsustainable amounts of water, permitted by ineffective regulations that put profits over people.
- Almond and alfalfa irrigation guzzles about 3 trillion gallons of water per year, mega-dairies use more than 142 million gallons per day, oil and gas operators have devoured 3 billion gallons of freshwater since 2018, and a bottled water company has been accused of illegally siphoning more than 56 million gallons from a California national forest.
- Water management and rights systems that give deference to corporations have allowed billions of gallons of California's water to be exported overseas in the form of water-intensive products like almonds, alfalfa and dairy.
- California's water rights are extraordinarily complicated — historically favoring large industry and agribusiness — and allow for trading with little transparency. California's precious groundwater is over-pumped and under-regulated. The state's recent attempt at regulation, the Sustainable Groundwater Management Act, falls far short of protecting California's groundwater by delaying action until 2040 and prioritizing industry over the human right to water.
- Vulnerable communities are being denied the human right to water as thousands of wells are at risk of running dry across the state. Low-resource households, people of color and communities already burdened with environmental injustices are more likely to face severe drought impacts and water shortages.

## Key Recommendations

- Governor Newsom must direct state water boards to immediately stop egregious misuses of California water. This includes preventing the planting of new almond and alfalfa acres on the salty, dry west side of the San Joaquin Valley, banning new mega-dairies, ending new oil and gas drilling, and banning bottled water extraction for non-emergency purposes.
- Governor Newsom and California's water boards must ensure that water rights and water allocations benefit the public. California water policy must advance the goals of the human right to water, ensuring that everyone has access to safe, clean and affordable public water.
- The California legislature should expressly define all water, including groundwater, as a public trust resource, and the government should protect and preserve this common resource for the public. The public trust doctrine, which is rooted in longstanding legal principles, enables states to hold and protect natural resources,[2] putting the public interest before private interests and making it more difficult for private parties to inflict harm.[3]
- U.S. Senators Alex Padilla and Dianne Feinstein and House Speaker Nancy Pelosi must co-sponsor and work to pass the federal Water Affordability, Transparency, Equity and Reliability (WATER) Act. This critical legislation would dedicate billions of dollars a year to fully meet our nation's water needs, protect vital water resources, help ensure water access and affordability, and put water systems back in the hands of the people.

## Background: Water and Drought in California

Climate change is worsening drought conditions in California. As of September 2021, 88 percent of the state was experiencing an extreme drought, 47 percent of which was categorized as exceptional — the most severe drought categorization.[4] Long-term, exceptional droughts can lead to land subsidence, severe ecological disruption, increased severity and intensity of wildfires, widespread water shortages, low agricultural yields, high water prices and poor water quality.[5]

California will continue to experience more frequent and intense droughts due to climate change throughout this century.[6] Rising temperatures will cause more evaporation of freshwater supplies, less recharge of groundwater and severe impacts on surface water resources.[7] Small water utilities and the communities they serve, especially those that depend on groundwater, can suffer under these conditions.[8]

Because drought and aridity affect various regions of the state differently, 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.[9] For example, massive water infrastructure projects like the State Water Project and the Central Valley Project distribute surface water from the Sacramento-San Joaquin Delta throughout the state.[10] Southern California also receives water from the Colorado River via Lake Havasu and the Colorado River Aqueduct.[11] But these massive diversions and complicated systems of allocation have proven to be band-aid solutions for a dry state with a limited water supply.

## Problem 1: Five Major Misallocations and Misuses of Water That Put Corporations Over People

Almond empires, alfalfa exporters, mega-dairies, oil and gas operators, and bottled water companies use millions of gallons of the state's limited water during times of intense dryness to amass tremendous profits while Californians' wells run dry. And while these private interests are guzzling down the water supply, more than 1 million people in California do not have access to safe drinking water.[12]

The state's water budget cannot afford any misuse of water, but a lack of government regulation and arcane water allocation make this misuse possible. Governor Newsom and the State Water Resources Control Board must exercise their constitutional and common law obligations to regulate surface water and groundwater to protect water as a public trust resource, guard against "waste and unreasonable use" and ensure fair access to water for all Californians.[13]

### Water-Intensive Almond Industry Expands Despite Water Scarcity

Agriculture accounts for 80 percent of the water used in California.[14] In 2018, farms across the state used an estimated 7.9 trillion gallons of water.[15] One massive agricultural water user — almond cultivation — occupies more than 1.33 million acres.[16] Tree nuts such as almonds, pistachios and walnuts accounted for 20 percent of California's agricultural water usage in 2013.[17] At least 1.5 trillion gallons[a] of water will be needed to irrigate 1.3 million bearing acres in the 2021 season.[18] More than 60 percent of California's almonds were exported in 2019 – essentially exporting 910 billion gallons of the state's already limited water supply.[19] Despite dwindling water supplies and years of intense droughts,[20] thirsty almond acreage in California has increased steadily since the 1990s. Undeterred by the significant 2012-2016 drought, almond acreage exploded by nearly 73 percent from 2010 to 2021 (*see Figure 1*).

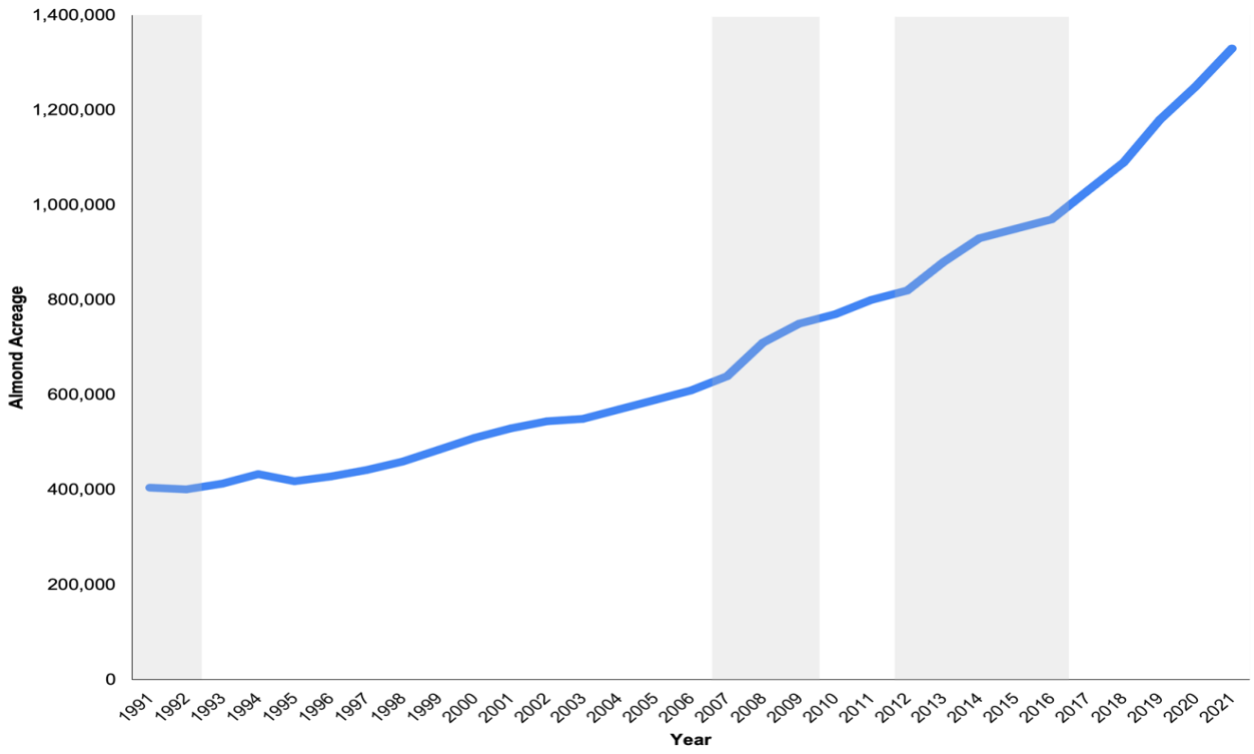
Almonds are a lucrative crop: the 2020 production value of almonds in California amounted to $5.6 billion.[21] The almond boom has been a windfall for a handful of corporate farms, including the Wonderful Company, owned by Beverly Hills billionaires Stewart and Lynda Resnick, one of the largest growers and packers of almonds and pistachios in the world.[22] The Resnicks are also major political contributors and recently gave $250,000 to Governor Newsom's campaign against the recall election.[23]Just less than 6 percent of California's almond farms operate on more than 500 acres, but that 6 percent controls more than half of all almond acres in the state.[24]

Arid California produces 82 percent of the world's water-hungry almonds.[25] Sixty-two percent of the almonds harvested in California were exported in 2019, generating $4.9 billion in foreign sales to markets such as Europe, China and India.[26] The majority of the state's almonds (62 percent in 2019-2020) are produced in the San Joaquin Valley, the southern part of the Central Valley.[27]

The rising global demand for almonds has spurred growers to plant almond and pistachio trees galore on the dry, hot and salty soils of the west side of the San Joaquin Valley.[28] But almond growth on the west side threatens the already fragile water resources in this region.[29] The drier west side of the San Joaquin Valley is also home to more large landowners and massive farms compared to the east side of the valley.[30] Not only is the west side dry, but much of its soil is also contaminated with naturally occurring selenium and salt due to years of heavy irrigation. The irrigation-induced, selenium-filled runoff is a major environmental problem that harms migrating birds and chokes the San Joaquin River with excess salt.[31] Poor drainage and runoff further complicate irrigating this region.[32]

[a] Calculated using 1.33 million bearing acres in 2021 reported by the U.S. Department of Agriculture (USDA), with an average of 3.5 acre-feet applied per acre. Converted from 4.66 million acre-feet to 1.52 trillion gallons. Bearing acres are defined as acres with trees over four years old, according to the USDA.

**Figure 1. Almond acreage in California from 1991 to 2021. Significant drought years are indicated in gray.[33]**



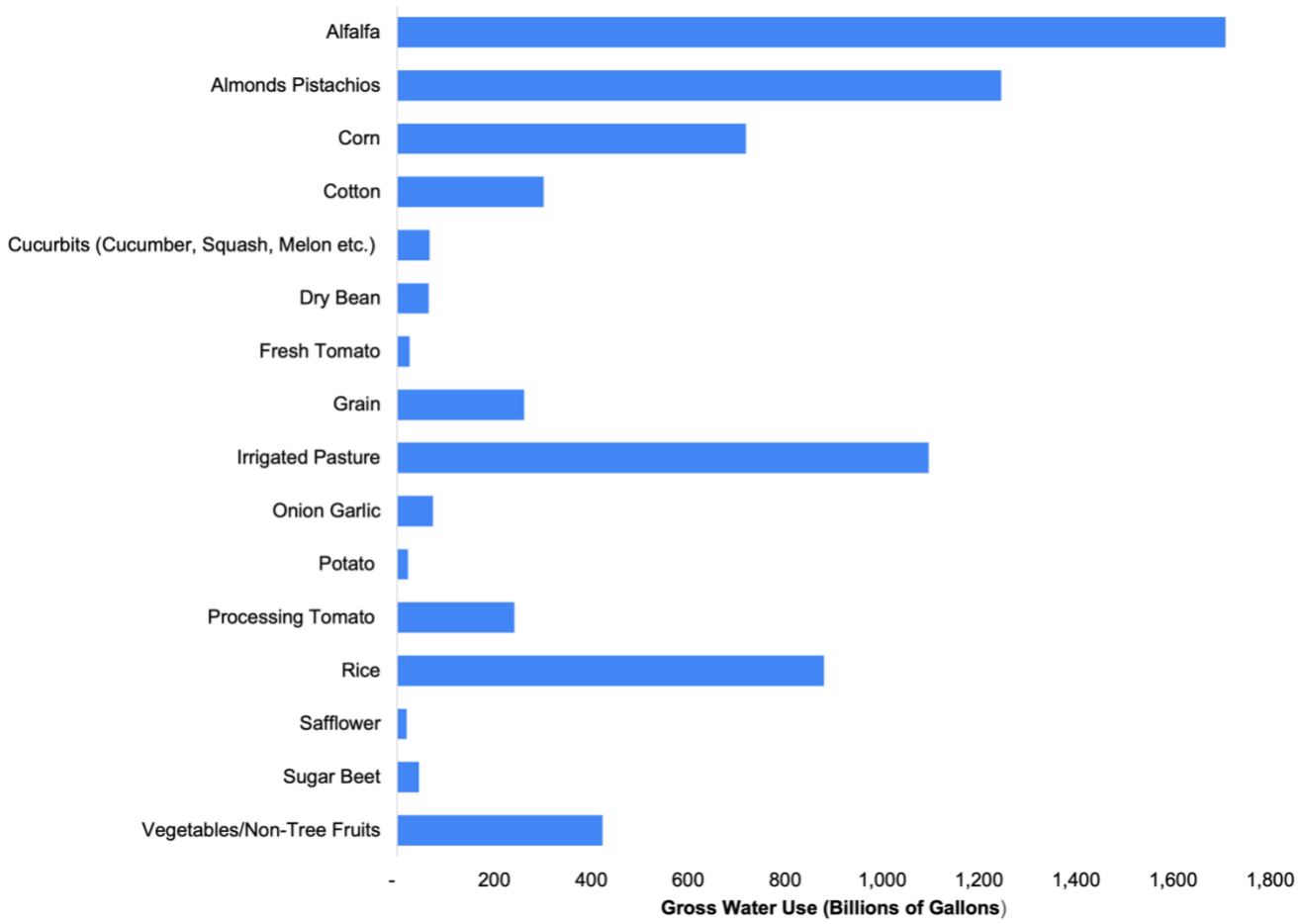

The Westlands Water District in the southwestern San Joaquin Valley is the largest agricultural water district in California.[34] Home to rampant almond production,[35] this water district pumped more than 1 million acre-feet (or 326 billion gallons) of groundwater from 2015 to 2020[36] — enough to provide everyone in Los Angeles, San Diego, San Jose and San Francisco with the recommended amount of daily water (55 gallons per person per day) for more than two years.[37]

Under the Trump administration, the U.S. Department of the Interior awarded the Westlands Water District a massive, permanent water contract that, according to the *Los Angeles Times*, would provide the district with around twice as much water as is used by the 4 million residents of Los Angeles each year.[38]

Water misuses, such as the cultivation of water-intensive almonds on the west side of the valley, mean that the majority of the state's surface water supplies from the Delta have gone to irrigate crops in places like the west side – not to household usage in southern California and other urban areas.[39] The scale and intensiveness of almond production compared to other crops makes this level of almond and other tree nut production in the desert during a drought unsustainable (*see Figure 2*).

Additionally, this thirsty crop is proving difficult to maintain during the 2021 drought — with some farmers deciding to rip out almond trees to allocate water to less-thirsty crops.[40] Almond orchards are permanent and need to be watered year-round, which is becoming increasingly difficult with limited water resources.[41] Small farmers who do not have senior water rights or the capital to drill deeper wells to pump large amounts of groundwater have to make difficult decisions with their limited water.

**Figure 2. Gross water use of selected California crops in millions of gallons for 2015.[42]**




## Alfalfa and Exploiting Old Water Rights Through Land Grabs

Alfalfa uses a huge share of California's agricultural water — 16 percent. This thirsty crop occupies almost 1 million irrigated acres in the state.[43] On average, around 5.0 acre-feet of water is applied per acre of alfalfa, necessitating an estimated 5 million acre-feet (more than 1.5 trillion gallons) for irrigation,[44] or more than enough water to provide the daily recommended water needs (55 gallons per person per day) for every Californian for over a year.[45] Alfalfa farming is dominated by massive farms — with just 15 percent of the farms controlling 63 percent of the total irrigated alfalfa acres. The largest 6 percent of farms (all with 1,000 acres or more each) own more than one-third of the total irrigated acres of alfalfa. Four farms collectively own more than 30,000 irrigated acres of alfalfa.[46]

Like almonds, alfalfa is water intensive and exported overseas. In 2019, 29 percent of the alfalfa hay produced in California was exported, making alfalfa the state's thirteenth most valuable export, generating hundreds of millions in revenue for large landowners.[47] But this thirsty crop is grown in some of the state's hottest and driest areas, including the Imperial Valley.[48] When water-intensive crops are exported, the large quantities of water used to produce those crops, and therefore contained within these agricultural products, are "virtually" shipped abroad in a process called virtual water trading (see "What is Virtual Water Trading?"[49]).

California's water rights system has allowed corporations to buy land with senior water entitlements and to gain access to cheap water with few restrictions. The southwestern United States is an attractive location for companies seeking water, as there are strong legal protections for farms and agriculture.[50] For example, despite complicated, over-budgeted water allocations from the Colorado River, senior appropriative water rights in the Palo Verde Valley give the region first priority during droughts and shortages.[51] In Blythe, California, an 1877 appropriative water rights claim declares that Blythe has "unquantified water rights for beneficial use." Water is sourced to Blythe from the Colorado River via a series of dams and canals.[52]

For instance, Fondomonte Farms, a subsidiary of the Saudi company Almarai, owns 15,000 acres and massive storehouses in Blythe to grow and export alfalfa back to Saudi Arabia to feed dairy cows.[53] The move to California and other parts of the Southwest came after the Saudi government banned growing wheat, green fodder and livestock feed in 2016. The Saudi government had determined that these water-intensive crops were not a good match for the desert climate and limited freshwater resources in Saudi Arabia.[54]

### What Is Virtual Water Trading?

The water embedded in the process of producing goods that are then exported around the world is called virtual water trading. Virtual water trading is already common, but exporting water from nonrenewable groundwater basins is predicted to double by 2100 as climate change intensifies water scarcity in some regions.

Exporting groundwater can contribute to depletion and over-drafting that can have significant consequences, especially in over-drafted basins like the Central Valley.

Al Dahra ACX, another agriculture company and a subsidiary of a company based in the United Arab Emirates, also farms alfalfa and other crops in southern California and Arizona.[55] Al Dahra ACX leases 4,700 acres in Palo Verde Valley and owns 2,600 acres in the Imperial Valley. Both Almarai and Al Dahra farm all over the world.[56] California's patchwork water rights system has proven to favor agribusinesses that grow lucrative, water-intensive crops while wells run dry.[57]

While large quantities of alfalfa are exported by both foreign and domestic-based companies, lots of the alfalfa grown in California stays in California to feed the 1.7 million dairy cows in the state.[58] 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.[59]

**Mega-dairies Consume and Threaten California's Water Resources**

In 2019, one-third of California's dairy products were exported (based on converting all dairy products to their fluid milk equivalent).[60] While homes are running out of water in the Central Valley, large mega-dairies are making considerable profits and using millions of gallons of water a day.

Industrialized animal agriculture is notoriously water intensive. Mega-dairies[b] consume enormous amounts of water to irrigate crops that absorb animal waste, feed cows, flush manure from barns and run milking equipment. The most recent USDA Census of Agriculture reported that nearly 1.7 million cows were living on factory dairy farms in California. 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 (those with under 500 cows). California has more dairy cows living on factory farms than any other state — three times as many as the number two state, Idaho.[61]

Food & Water Watch estimates that it takes **142 million gallons of water a day** to maintain the dairy cows on California's mega-dairies — more than enough water to provide the daily recommended water usage for every resident of San Jose and San Diego combined. That volume is limited to the water that

[b] In this piece, mega-dairies refer to operations with 500 or more cows, as this corresponds with data categories in the 2017 USDA Census of Agriculture, which do not provide information on confinement and waste management.

is given to cows to drink and that is used to wash cows and buildings; it does not include the large quantities of water needed to raise feed, such as alfalfa, or to move manure into storage systems.[62] A lack of available numbers tallying the meat industry's water use in California presents a problem as the state seeks to tackle the drought crisis.

These operations also threaten California's already limited water supply with pollution. Agriculture is the leading polluter of U.S. rivers and streams,[63] and the U.S. Environmental Protection Agency's weak rules allow most factory farms to avoid meaningful regulation.[64] The sheer amount of manure that mega-dairies produce often exceeds what crops can absorb, resulting in over-application and runoff into local waterways.[65] Mega-dairy waste disposal also threatens to contaminate scarce groundwater resources. Drinking water contamination from factory farms has been likened to rural America's "own private Flint."[66]

In California, mega-dairies are concentrated in the Central Valley. Tulare County has more dairy cows on factory farms than any other California county — nearly 500,000.[67] It is acutely impacted by the drought and water shortage, with some predictions estimating that nearly half of domestic wells in the county could run dry in 2022.[68] Mega-dairies also emit greenhouse gases, such as methane and nitrous oxide, that fuel the climate change-worsened drought with warming temperatures, increased evaporation, lower soil moisture, etc.[69]

**Oil and Gas Companies Suck Up Water and Accelerate the Climate Crisis**

As California suffers from a major drought and endures a climate change-fueled wildfire season, oil and gas operators use hundreds of millions of gallons of freshwater for drilling operations annually.[70] It is a vicious cycle: fracking and drilling contribute to climate change and suck up finite water resources, then drought and wildfires worsen from climate change.

Food & Water Watch found that from January 2018 to March 2021, the oil and gas industry used **more than 3 billion gallons** of freshwater for drilling operations — water that could otherwise have supplied domestic systems.[71] That is the equivalent of around **4,570 Olympic-sized pools**[72] or **more than 120 million showers** for California households.[73] It also exceeds the total amount of water that Californians are recommended to use on a daily, per capita basis during drought (55 gallons per day).[74] The freshwater sucked up by the oil and gas industry since 2018 could have provided everyone in the city of Pasadena with the recommended amount of daily water for an entire year, or everyone in the city of Ventura for 16 months.[75]

California cannot afford to waste its water on industries that unequivocally worsen the water crisis. Fossil fuels extracted using the state's water contribute to climate change and, in turn, intensify prolonged drought conditions and increase the frequency, size and severity of wildfires.[76]

At the same time, oil and gas development pollutes and threatens California's finite freshwater resources. Some corporations have routinely injected oil wastewater directly into the state's aquifers.[77] This toxic wastewater contains fracking fluids, contaminants, brines and radioactive materials.[78] Injecting toxic wastewater into underground wells puts drinking water at risk and is linked to increased earthquake activity.[79]

California is facing an exceptional drought, but the risks of water shortages are not distributed evenly. In the Central Valley, low-resource communities, communities of color and communities already burdened by environmental injustices bear the brunt of drought impacts.[80] More than 80 percent of California's new and active wells drilled by the oil and gas industry are in the Central Valley.[81] And while families battle water shortages, the oil and gas industry is permitted to use and abuse the state's limited water supplies to extract fossil fuels and profits at the public's expense.[82]

### Bottled Water Companies Extracting Water for Profit

California is home to 97 water bottling plants, and the most egregious of these is Blue Triton (formerly Nestlé Waters).[83] During a now-historic drought, Nestlé (now Blue Triton) continued to exploit the state's water regulations and bottle up water that belongs to the public. The California State Water Resources Control Board (SWRCB) accused the bottled water giant of withdrawing 25 times more water than it has the right to from the San Bernardino National Forest. In 2020, Nestlé withdrew 59 million gallons, whereas according to the SWRCB it should only be withdrawing 2.4 million gallons per year.[84] Nestlé reportedly pays the U.S. Forest Service just a $2,100 fee annually to maintain the company's permit and water infrastructure.[85]

Overdrawing negatively impacts the residents and wildlife that rely on the watershed for drinking water. While the SWRCB sent a cease-and-desist letter to Nestlé in April 2021 to stop withdrawing water from the San Bernardino National Forest, this misuse and abuse of public water should never have occurred in the first place. Companies like Nestlé should not be bottling up a public resource and then reselling it for thousands of times more in environmentally damaging plastic bottles.[86] Blue Triton is appealing this order, and it appears that the company is still continuing its allegedly illegal water withdrawals.[87]

While Food & Water Watch has always opposed bottled water, during a historic drought the moral imperative for ending this practice is crystal clear.

## Problem 2: California's Poor Water Management Strategy

### A Complicated System of Water Entitlements

California's water laws and rights have been implemented in a way that fails to protect this finite resource, contributing to water shortages in California. The state distributes water entitlements via a "unique blend" of appropriative and riparian rights.[88] (See "Understanding Water Rights."[89])

In California, a "water right" does not constitute ownership of water, but rather a legally recognized entitlement to use water for "reasonable" and "beneficial" uses without harming anyone else's water entitlements.[90] The description of water rights in the box to the right provides a brief overview of this system but does not detail aspects such as water trading/transfers and the role of water districts that add further complexity to the water allocation landscape.

California's water entitlements are very complicated, depending on the water's source (surface versus groundwater); when (pre- or post-1914) and how the right was originally acquired; whether the right is for the use of riparian property on or overlaying the groundwater source; or whether it is for the use or storage of the water (appropriative). Complicating this further is that much of California's water comes from contracts acquired from the State Water Project and the U.S. Bureau of Reclamation's Central Valley Project[c]. Within this system, there are exceptions depending on the specificities of individual contracts and agreements between water rights holders,

**Understanding Water Rights**

**Appropriative Rights:** Established in California during the gold rush, these water rights, codified by the Water Commission Act of 1914, gave white settlers who first diverted surface water for "reasonable and beneficial" uses in California priority water rights, known as "first in time, first in right." These entitlements can be for surface water or groundwater and can be bought and sold.

**Riparian Rights**: Property owners can use surface water that touches their property, as long as their consumption does not diminish the source for other users.

**Overlying Rights**: The right for landowners to use groundwater from aquifers beneath their property for beneficial uses.

[c] For a more comprehensive review of water rights, see: Sawyers, Gary W. "A Primer on California Water Rights." University of California at Davis. 2007. Available at https://aic.ucdavis.edu/events/outlook05/Sawyer_primer.pdf.

water districts and other water suppliers.[91] This system is even more complicated during times of drought when some water entitlements cannot be fulfilled.

The Water Commission Act of 1914 codified the appropriative water rights system and required all future diversions of surface and groundwater to be permitted at the state level by the SWRCB.[92] When senior water rights take precedence in water allocation, particularly during times of severe drought, the constitutional principle that water is to be used for reasonable and beneficial uses is sometimes overlooked.

Water entitlements in California are hierarchical. Those with the oldest claims (pre-1914) or riparian claims are awarded the highest priority in times of water shortage and drought.[93] Overlying and appropriative groundwater rights are not adequately regulated.[94] The 2021 drought year has proven to be unprecedented, with state regulators announcing in August that there was no water available to allocate to thousands of senior water rights holders.[95] This is only the third time in California's history that state regulators have enacted this type of severe water rights curtailment.

With climate change intensifying, this type of restriction will likely become more common.[96] Even before the 2021 drought year, researchers predicted that water rights curtailments in the coming decades could last 20 percent longer and occur 10 percent more often than they have previously.[97] The SWRCB cites the need to retain water in the Delta to ensure that outflows are strong enough to stave off salt water intrusion from the San Francisco Bay that would have devastating consequences for the water supply and the Delta ecosystem.[98] The Delta and the water budget are over-allocated, so even with these severe water rights curtailments, there is not enough water to go around.

**Over-allocating Water**

In addition to an inadequate system of water allocations, California has routinely promised more water than it can deliver.[99] Water rights are currently allocated based on the expectation of water in the system, but a drought can change the amount of available water to be distributed among rights holders. Some water rights holders may not receive their full allotment because of changes in available water — a distinction known as "paper water" versus "wet water."[100] This is especially important for junior rights holders, who have a paper right to water once the senior rights holders have exercised their rights. This system can force farmers and others with curtailed rights to turn to already stressed groundwater to compensate for anticipated paper water that does not exist.[101] Reliance on the hierarchical appropriative rights system can conflict with the constitutional principle of reasonable use that would emphasize how water is used when determining allocations to rights holders.

A study comparing water rights allocations from the SWRCB to California's actual supply of water found that the state has issued rights for five times as much water as it could actually deliver based on mean annual water supplies.[102] The state acknowledges that the value of all water rights is greater than the average amount of water available.[103] Developing reliable predictions for the supply of water available in the Delta is complicated by a changing climate, complex water rights and evolving environmental regulations.[104] When Delta exports fall short of expectations (for example, during droughts), agriculture in the Central Valley turns to over-drafted and unregulated groundwater sources.[105]

What's more, separate rules govern the transfers of water under these rights, but the state does not actually comprehensively track these trades. This means that the whole system lacks transparency.[106]

**Turning to Groundwater**

In addition to promising more water than is available to corporations, California lacks groundwater withdrawal regulations, allowing these entities to suck up the finite source of groundwater at a breakneck pace. Insufficient surface water, lack of groundwater regulations and advancing technology have led large agribusinesses to pump groundwater at an alarming rate for years.[107] Groundwater has become

increasingly important for drier regions of the state, such as the San Joaquin Valley, when surface water diversions are insufficient or cannot fulfill all paper water rights.[108] Groundwater accounts for 30 percent of water used by California agriculture in wet years, and for a staggering 80 percent of water in dry years.[109]

As drought conditions worsen in the state and Big Ag uses more and more groundwater, sinkholes will increasingly form and ecosystems will suffer. For example, a period of intense drought from 2012 to 2016, compounded by excessive groundwater pumping, caused the ground in parts of the Central Valley to sink almost two feet per year into empty space where water used to be.[110]

While groundwater aquifers naturally recharge over time when water filters through the soil and rock, they can take many years to recover after drought and depletion.[111] When corporations pump groundwater at unsustainable rates, rural communities, small water systems, ecosystems and everyday Californians suffer as a result.

**The Not-So-Sustainable, Sustainable Groundwater Management Act**

The Sustainable Groundwater Management Act (SGMA) was passed in 2014 and purports to initiate long-overdue regulation of California's groundwater. But the SGMA does not require regulations to take effect immediately, and groundwater pumping in California therefore remains largely unregulated. Prior to the passage of the SGMA, groundwater rights were based on land ownership, and the state had done little to regulate the drilling and pumping of water from underground aquifers. The SMGA recognized groundwater as a shared resource that can be regulated by the government.[112] Unfortunately, the SGMA falls short and fails to protect California's groundwater by delaying regulations until 2040, which does nothing to protect communities that currently lack or will lose access to water over the next 19 years.

The SGMA defines "sustainability" as avoiding six undesirable results: lowering groundwater levels, reducing groundwater storage capacity, seawater intrusion, degrading water quality, land subsidence and depleting interconnected surface waters.[113] Yet groundwater sustainability agencies are not required to raise groundwater levels, rather only to stabilize them. Despite rapidly depleting water sources, the law does not require agencies to fully implement their sustainability policies until 2040.[114] If the future implementation of the SGMA only stabilizes already depleted groundwater levels, California could get locked into an unsustainable system that is still in dire need for restoration.

This law is problematic for many reasons, including the fact that large agricultural interests with their senior water rights, organized industry groups, and connections to water districts and political networks hold more access and influence than disadvantaged groups and communities when it comes to developing and implementing the SGMA and local groundwater policy. Meanwhile, small farmers generally lack the same power and influence and are less likely be involved in developing groundwater sustainability plans (GSPs).[115] These problems could be made worse as GSPs rely on the trading of groundwater allocations.

Currently, an estimated 250 communities, more than 800 public water systems and over 34,000 domestic wells are located in critically over-drafted groundwater basins in California.[116] An estimated 2 million people in the state rely on private wells for their water, and 95 percent of residents in the Central Valley get their water from groundwater.[117] The groundwater sustainability agencies within these basins submitted their GSPs to the SWRCB in January 2020. Few of the GSPs developed as part of the SGMA addressed drinking water access and the human right to water, even though thousands of people rely on groundwater for their basic needs and California has codified water as a human right.[118] Disadvantaged, rural and low-resource communities face barriers to participating in the development of GSPs and are under-represented in groundwater sustainability agencies.[119] Ineffective government regulation has paved the way for industry to misuse California's limited water resources, and it bears a disproportionate burden on the state's most vulnerable communities.

## The Consequences: California's Dwindling Water Supply

Record-breaking droughts coupled with California's bizarre and inequitable rules around water have forced communities to grapple with water scarcity, and climate change further threatens water resources.[120] Agribusinesses, oil and gas corporations, and bottled water giants guzzle millions of gallons of water, despite the state's obligation to make sure that everyone has access to water — even during times of drought.

In 2012, Governor Jerry Brown signed legislation, endorsed by Food & Water Watch, to recognize the human right to water in California. That legislation established state law that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes," and that all California policy must consider this right when establishing new policy or regulations.[121] The state conducts drinking water assessments and drought and water shortage vulnerability assessments that have identified hundreds of small public water systems and thousands of domestic wells that are currently or at risk of failing to meet the standards for the human right to water.[122]

One in five water wells in the Central Valley drilled after 1975 have gone dry, mainly concentrated in the southeastern region of the Valley.[123] More than 2,000 domestic wells in the San Joaquin Valley ran dry during the 2012-2016 drought.[124] Low-resource, small and rural communities are disproportionately impacted by drought because they rely primarily on domestic wells. These areas were hardest hit by the 2012-2016 drought.[125] Historic and continued racism has resulted in people of color, particularly Latinx and farmworker communities, suffering the brunt of water shortages and water contamination.[126]

As water shortages continue, Californians will continue to pay the price. Domestic water wells run dry more often than agricultural wells on massive farms because they are often shallower and homeowners lack the resources to pay for new, deeper wells.[127] Small and rural communities in the Central Valley often rely predominantly on groundwater, with no easily accessible backup water source or drought contingency plan.[128] One analysis predicted that more than 3,600 domestic wells in the Central Valley could run dry in 2022, with almost half of those wells located in Fresno, Madera and Tulare counties. Nearly half of the 1,000 wells in Tulare County could run dry in 2022.[129]

The SWRCB recently created a list of "public water systems likely to have critical water supply issues by the end of August [2021]." This list included 81 water systems that provide water to a combined 130,000 people.[130]

Another consequence of over-promising water is the inability to maintain suitable water levels for environmental needs and for the health of fisheries in the region. The low water levels and warm temperatures are wreaking havoc on fisheries in the Klamath River Basin in southern Oregon and northern California. The C'waam and Koptu sucker fish and the Chinook salmon, fisheries all central to several Indigenous tribes in the region, are collapsing.[131] Senior water rights holders and wealthy water districts possess a great degree of power in water allocation decisions — decisions that often ignore Indigenous communities and communities of color that were removed from their land and faced racism that limited their ability to own land and water rights. Fair allocation of water resources would ensure that Indigenous communities have a seat at the table and that the state addresses the crises of salmon extinction and water quality in the Delta.[132]

Exacerbating these issues are bad regulations and massive water misuses by corporations that put profits over people.

## Conclusion and Recommendations

Between poor water management, water budget abuses and historic drought, California faces an unprecedented situation that requires bold and immediate action. The existing systems have failed to protect and support communities and ecosystems, instead elevating the corporate profits for those industries that only make the water crisis worse.

California law provides that water cannot be owned, but instead used by private parties only for reasonable and beneficial uses.[133] Ultimately, water in California is held in the public trust by the state, and courts have ruled that the state's public trust doctrine applies to some groundwater resources as well as surface waters.[134] Water is a common resource and a human right. The public trust doctrine states that the air, rivers, sea and seashore cannot be owned privately, but are instead dedicated to the use of the people.[135] The state must improve its water regulations and management systems in accordance with the public trust doctrine and the human right to water to stop ongoing corporate water abuses, guarantee water access for people, and protect the public's interest and well-being.

**Food & Water Watch recommends:**

At the state level:

- Stop egregious misuses of California water. Governor Newsom and his administration should:
  - Declare a state of emergency for the entire state — not just selected counties.
  - Declare using groundwater to grow almonds and alfalfa in the southwest San Joaquin Valley "waste" and not a beneficial use.
  - Stop new almond and alfalfa planting in the region, while providing assistance to help small growers transition to more sustainable and less-thirsty crops.
  - Ban new mega-dairies and the expansion of existing mega-dairies.
  - Place an immediate moratorium on new oil and gas operations in California.
  - Ban the private extraction of water for bottling for profit and reject additional bottling permits.
- Improve water management regulations and practices to conform with the public trust doctrine and the human right to water — putting the needs of the people first. The California legislature should define all water, including groundwater, as a public trust resource, not a commodity subject to resource extraction at the expense of the public. California water policy must ensure that everyone has access to safe, clean, affordable and accessible water. State water regulations should take into account the reality of our changing climate.
- Improve the transparency of water rights transactions, including prices, volumes and regulations.
- Respect the water rights of Indigenous communities, actively consult with Indigenous communities on water rights and best water management practices and prioritize state support to disadvantaged communities experiencing water shortages.
- Accelerate the implementation of groundwater sustainability plans (GSPs) under the Sustainable Groundwater Management Act, while ensuring that the groundwater agencies and the GSPs reflect the needs of all stakeholders, centering vulnerable communities and small and rural water systems as codified in California law. The human right to water must be discussed in GSPs.
- Declare mandatory conservation measures across the state, limiting water consumption to 55 gallons per person per day to get closer to the milestone set by Assembly Bill 1668.

- Reject public subsidies for water projects that support privatized ocean desalination projects and the wasteful water practices of Big Ag.
- Prioritize locating and repairing leaky water pipes as the state's water infrastructure continues to age. California cannot afford to waste the water that it has.

At the federal level:

- U.S. Senators Alex Padilla and Dianne Feinstein and House Speaker Nancy Pelosi must co-sponsor the federal Water Affordability, Transparency, Equity and Reliability (WATER) Act to fully fund our water and wastewater systems, put water systems back in the control of the public, help ensure water access and affordability, and restore the commitment of the federal government to protecting water.

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