

Drying Up

How Factory Farms Worsen New Mexico's Water Crisis

Industrial agriculture contributes significantly to New Mexico's water crisis. It creates huge demands for freshwater supplies, pollutes groundwater and fuels climate change, which ultimately contributes to the statewide drought. New Mexico can and must act, either through legislation or through executive action.

New Mexico Is in the Midst of a Dire Water Shortage

The entire American Southwest is experiencing an ongoing climate-induced megadrought.¹ Based on tree ring data, experts describe the current decades-long drought as the second worst in 1,200 years.² By the first half of 2021, New Mexico was experiencing the worst drought yet in two decades of dryness,³ with over 77 percent of the state experiencing severe drought.⁴ In fact, New Mexico has the worst outlook for water scarcity in the country.⁵

Increasing temperatures from climate change will bring even drier conditions to New Mexico.⁶ Reduced snowpack and accelerated melting from higher temperatures reduce the amount of water that reaches the state's waterways.⁷ These local conditions are compounded by the drought trends in the regional water systems that supply New Mexico. For example, the Colorado River, which relies on annual snowfall for about 80 percent of its water, is facing shortages.⁸ Reduced snowpack because of rising temperatures in turn can contribute to more evaporation and less water reaching the river. Temperatures in the Colorado River Basin have already risen by 2.5 degrees Fahrenheit over the past century.⁹

New Mexico buoys water levels by releasing water from reservoirs, unsustainably borrowing against the future. In 2020, the state released 12 billion gallons of water from the El Vado reservoir just to keep the Rio Grande River flowing to meet obligations to downstream users, creating a huge water debt.¹⁰ Reservoirs in New Mexico held about 20 percent as much water as usual in early 2021.¹¹



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The Rio Jemez, a Sandoval County, New Mexico tributary of the Rio Grande, slows to a trickle from severe drought conditions.

New Mexico's Water Crisis is Already Severely Disrupting Communities and Livelihoods

This drought has reduced the quantity of water in rivers, streams and other surface waters. In some places surface waters and irrigation channels are running dry with serious consequences for local economies. Irrigation canals replenished by snowmelt and rainfall that operated for over a century have begun to run dry for the first time.¹² Without water to sustain their economies, long-time residents across northern New Mexico are forced to abandon their homes, turning former communities into ghost towns.¹³ In Las Cruces, small farmers are forced to sell their farms when they cannot afford groundwater.¹⁴ Farmers in southern New Mexico's Elephant Butte Irrigation District were told they would have to make do with just 16 percent of their typical water supply for June 2021.¹⁵

Water Shortages Threaten the Supplies That New Mexicans Depend on for Drinking Water and Agriculture

A 2018 report found that all planning regions in New Mexico will have less than 75 percent of the necessary supply to meet 2060 water demands.¹⁶ Crop production has already fallen as a result of water shortages. In part because of increased temperatures, the production of forage crops has fallen since the 1960s.¹⁷ Drought has also reduced the state's grazing capacity by about 20 percent over the past century.¹⁸

New Mexico has been diverting water from the Colorado River based on water flow assumptions formed in 1922. This water in turn supplies drinking water to cities in New Mexico.¹⁹ Albuquerque and Santa Fe are increasingly dependent on the augmented waters of the Rio Grande, which in turn rely on unreliable supplies of imported water.²⁰

In 2015, about half (48 percent) of fresh water extracted in New Mexico came from groundwater sources.²¹ Diminished surface water supplies have driven even faster extraction of scarce groundwater.²² Experts describe aquifers as being "mined to extinction."²³ These groundwater sources recharge very slowly but are not sustainably managed.²⁴ In 2021, of the 25 U.S. Geological Survey (USGS) groundwater monitoring stations in the state with rankings, 19 had water levels in the bottom 25th percentile of historical measurements and 15 were below the 10th percentile.²⁵

Factory Farming Is at the Root of New Mexico's Water Woes

The vast majority of fresh water in New Mexico — more than 80 percent — is used for agriculture.²⁶ In comparison, domestic use is about 10 percent.²⁷ Agricultural water use is dominated by the unsustainable water requirements of producing feed for mega-dairy and beef feedlot systems.

The largest agricultural use of water in New Mexico is for growing alfalfa, a notoriously water-thirsty livestock feed.²⁸ Alfalfa is the most important source of hay for New Mexico mega-dairies, grown on more than 185,000 acres.²⁹ Alfalfa has high water requirements and is almost entirely reliant on irrigation in dry states like New Mexico.³⁰

Additionally, a significant portion of New Mexico's hay production is exported out of state — more than

30 percent, according to a local industry association.³¹ Hay sold abroad often supports dairies in dry climates from China to Saudi Arabia.³² Saudi Arabia imports hay from New Mexico as the government phased out domestic alfalfa production to preserve water.³³

Factory Farms Use Huge Quantities of Water to Maintain Feedlots

Food & Water Watch estimates that it takes 32 million gallons of water a day to maintain the dairy cows on New Mexico's factory farms (those with 500 head or more).³⁴ This is not the full lifecycle water footprint, since there is no available information on the amount of livestock feed originating out of state.³⁵

In New Mexico, it takes approximately 28,203 liters of water (18 percent is surface or groundwater) to produce a kilogram of beef.³⁶ According to a conservative estimate, statewide direct use of freshwater for beef is 40 billion liters per year.³⁷ Beef cattle are bred on calf/cattle grazing operations but are largely raised on backgrounding and feedlot operations. These later phases greatly increase beef's water footprint due to the embodied water in the alfalfa and cereal crops consumed, which are much more dependent on ground and surface water irrigation.³⁸





Factory Farms Pollute Scarce Water Supplies and Contribute to Drought-inducing Climate Change

Dairy is New Mexico's largest agricultural sector.³⁹ It contributes to the nationwide problem of milk overproduction, which drives down the prices that farmers receive and pressures them to expand their operations.⁴⁰ Today, the state has about half as many small dairies (under 500 head) compared to 20 years ago.⁴¹ New Mexico has some of the largest herds, with the average mega-dairy confining more than 3,000 cows.⁴² Climate scientists are clear that this system of livestock overproduction is incompatible with addressing climate change.⁴³

Together, the 336,000 cows living on New Mexico's mega-dairies produce enough manure to overflow nine Olympic-sized swimming pools *each day*. That is 11 times as much sewage as is produced by the Albuquerque metropolitan area.⁴⁴ Yet 80 percent of New Mexico's mega-dairies have half the amount of land needed to absorb manure nutrients. Excess nutrients run off into surface water, creating a slew of problems including harmful algal blooms and fish kills. Mega-dairies also are polluting groundwater, the source of drinking water for the majority of New Mexicans.⁴⁵ Elevated levels of nitrate in drinking water are linked to health problems, including cancer and the life-threatening condition called blue-baby syndrome.⁴⁶

Nearly all New Mexico dairies (179) either have or are seeking groundwater discharge permits. Collectively, these facilities are permitted to discharge 8.1 million gallons of waste *every day*.⁴⁷ The New Mexico Environment Department (NMED) recognizes that "this discharge or leachate may move directly or indirectly into groundwater of the State of New Mexico" via "potential sources of contamination," including wastewater storage structures and

land application fields.⁴⁸ And according to NMED's interactive environment map, many, if not most, of these dairies are situated above aquifers marked as "high sensitivity."⁴⁹

This pollution poses serious threats to drinking water, which in New Mexico primarily comes from groundwater sources.⁵⁰ It is especially concerning for the 10 percent of New Mexicans who rely on smaller, unregulated water supplies like household wells. Private wells are not subject to regular water quality testing requirements and may contain odorless or tasteless contaminants.⁵¹

Conclusion and Recommendations

New Mexico must take action to address the unsustainable strain of factory farming on the state's increasingly scarce water. The New Mexico Drought Task Force should update the New Mexico Drought Plan to include mandatory drought response and mitigation actions specific to the dairy industry's threat to water supply and quality.

The Office of the State Engineer, which oversees water allocation, should prevent the wasteful use of water for factory farming. A first step is to prioritize truly beneficial water uses — those that are essential to life and human well-being — over those that merely serve to enrich corporate profits and prop up an unsustainable agricultural system.

NMED has broad authority to regulate water pollution in the state and should exercise this authority to protect the health of New Mexicans and the environment. That means holding polluters accountable by rejecting groundwater discharge permits and renewals to dairies that are discharging into highly contaminated aquifers, as well as terminating the permits of repeat violators. In times of drought the NMED should deny all groundwater discharge by dairies on the grounds that any contamination poses a threat when drinking water sources are overdrawn.

Endnotes

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