San Luis Valley Water Should Stay in the Valley

Renewable Water Resources plans to pump from a series of wells in concentrated areas of deep groundwater at the north end of the Valley.

FACT SHEET

Water Sustains the San Luis Valley

The San Luis Valley is about 200 miles southwest of Denver, Colorado. At around 7,500 feet in elevation, it is bounded on the west by the San Juan Mountains and the east by the Sangre de Cristos. The Valley floor, home to nearly all of the region's farms, ranches and population, averages only 7.5 inches of precipitation per year,[1] about a third to a half of what most of the Front Range receives.[2]

Snowmelt from the San Juans and the Sangre de Cristos is the main source of the Valley's water. As snow melts in the foothills surrounding the Valley, it seeps into the ground. It is joined by water flowing from the mountain streams to the rivers. This is the source of water for two major bodies of underground water — a deep (confined) aquifer and a shallow (unconfined) aquifer. They have been referred to as underground bath tubs.

The larger, deeper "confined" aquifer is under pressure, so wells from that often flow naturally at the surface, called "artisian flows." The confined aquifer's depth extends thousands of feet, but part of that water is either unrecoverable or of poor quality.[3]

When the deep aquifer has more water and its artesian pressure is higher, the region's streams and rivers lose less of their flow to the confined aquifer. When that pressure is lower, rivers and streams lose more of their flow to the deep aquifer.[4]

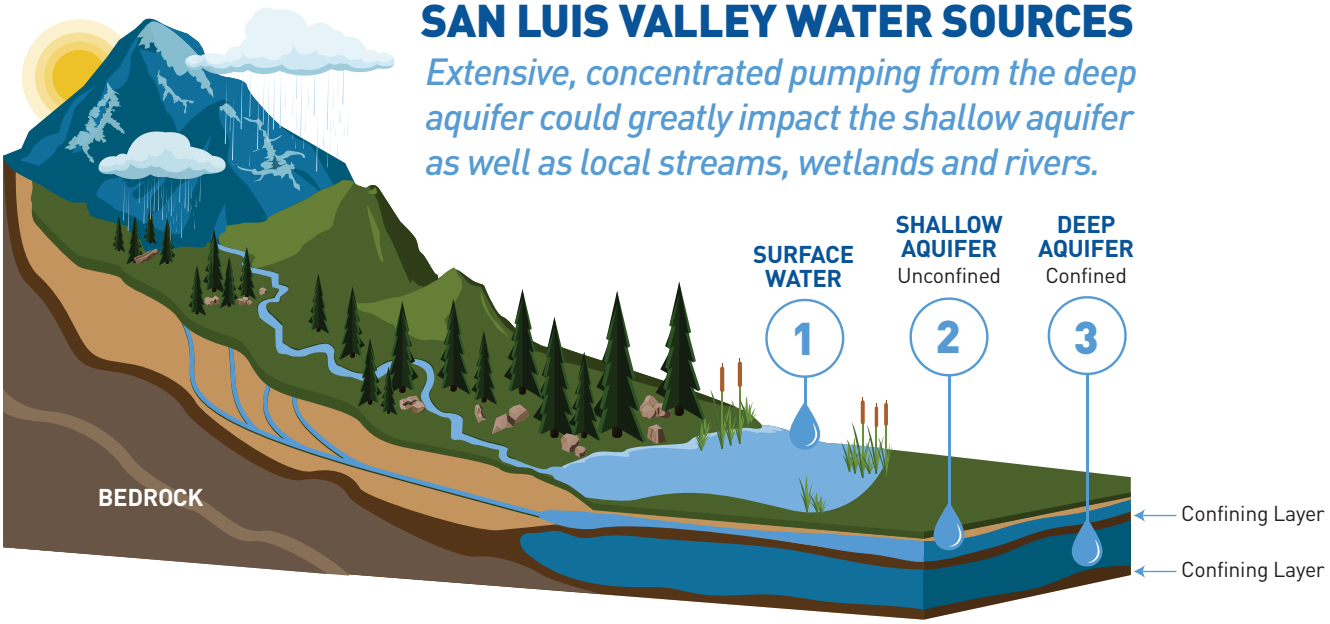
Clay layers separate the two aquifers. The depth to water in the shallow aquifer for most of the Valley is 15 feet or less. The shallow "unconfined" aquifer is generally 100 to 150 feet thick, below which is the clay separating it from the deeper confined aquifer.

Rio Grande river water, leakage from irrigation canals and water from crop irrigation travel into the shallow aquifer. Also, at times, water can leak up from the deep to the shallow aquifer.[5]

All three of these sources — surface water, the deep and shallow aquifers — are connected to varying degrees. Due to that connection, removing water from both aquifers can reduce river and stream flows and pumping from the deep aquifer can affect water levels in the shallow aquifer.

SAN LUIS VALLEY WATER SOURCES

Extensive, concentrated pumping from the deep aquifer could greatly impact the shallow aquifer as well as local streams, wetlands and rivers.



Water and the Environment

With the Great Sand Dunes National Park and Preserve, three extraordinary National Wildlife Refuges, the Rio Grande Natural Area, the Rio Grande National Forest and many other public lands, the Valley's water sustains wildlife for viewing, hunting and fishing, and many other forms of recreation. Pumping deep groundwater water from a concentrated area could negatively impact the environment, including streams, rivers, fish and wildlife.

Agriculture and Water

Valley farmers and ranchers rely on all three sources of water to grow potatoes that go to supermarket stands, barley that ends up in beer, alfalfa and hay for livestock, and other crops. With an annual market value of roughly $370 million,[6] these products make agriculture the region's largest private employer. None of them could be grown if farmers and ranchers depended on only natural precipitation.

Growers rely on groundwater to water crops after surface streams begin to recede after their flows peak, which typically happen in late May or June.[7] Agriculture uses 99% of the Valley's water to irrigate 523,000 acres of crops and hay meadows[8] while also sustaining important wildlife habitat along the rivers and streams.

There is no water available to be moved outside the San Luis Valley to the Front Range.

Overuse/Over-Appropriation

The demands placed on the Valley's water resources increased quickly after settlement. By 1900, the courts declared the region's streams and rivers to be over-appropriated,[9] meaning there are more claims to water rights than actual water. By 2006, Colorado courts declared both aquifers were over-appropriated.[10] In the case of the groundwater, over-appropriation means the amount of water withdrawn by legally permitted wells exceeds the amount of water refilling those aquifers. This means there is no water available to leave the Valley without disrupting the water supply needed by the local economy.

Pumping deep groundwater water from a concentrated area could negatively impact the environment, including streams, rivers, a National Park, wildlife refuges, as well as fish and wildlife.

Valley Collaboration to Address Water Issues

In response to a severe drought that started about 20 years ago and reached its peak in 2002 and recognition by local water users and state officials that groundwater use in certain parts of the basin is unsustainable, local leaders worked to pass legislation that allows communities within the Valley to create plans to balance water use and supply.

They formed groundwater management Subdistricts,[11] under the legal authority of the Rio Grande Water Conservation District. Their goal is to make groundwater use sustainable and protect senior surface water right holders from water shortages due to well pumping. A court-mandated order requires the shallow aquifer to be replenished to pre-2000 levels by 2030.

The Subdistricts charge well owners who are members, in part, for the amount of groundwater they use. In turn, those fees, are used to remedy the impacts to senior surface water users and restore the aquifers. For example, the money can be used to pay other farmers to reduce water use and allow for greater recharge of the aquifers. The members of the first subdistrict were making significant progress until another serious drought occurred in 2018.

The lack of recharge water and continued growth of crops, reduced aquifer levels and eliminated the gains in ground water storage from the previous five years. Despite such setbacks, they continue to work toward meeting the 2030 goal.

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[1] "Confined Aquifer New Use Rules," 2004CW24, Pg. 8

[2] Natural Resources Conservation Service, "Colorado Average Annual Precipitation & Crop Management Zones," accessed May 11, 2020. https://efotg.sc.egov.usda.gov/references/public/CO/CMZPrecip_1981_2010.pdf

[3] "Confined Aquifer New Use Rules," 2004CW24, Pg. 67

[4] "Confined Aquifer New Use Rules," 2004CW24, pg. 68

[5] "Confined Aquifer New Use Rules," 2004CW24, Pgs. 67, 85

[6] USDA, "2017 Census of Agriculture," County Profiles, accessed May 10, 2020. https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Colorado/index.php

[7] Subdistrict No. 1 Decree, 06CV64 and 07CW52, May 27, 2010, pgs. 31-32, 35-36.

[8] Basin Implementation Plan, pages 60, 25.

[9] Alamosa-La Jara v. Gould, 674 P. 2d 914 at page 918.

[10] "Confined Aquifer New Use Rules," 2004CW24, pg.136.

[11] Subdistrict No. 1 Decree, 06CV64 and 07CW52, May 27, 2010, pg. 74

San Luis Valley Water Conservancy District

Rio Grande Water Conservation District

Water Connects the San Luis Valley

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