CAFF
COMMUNITY ALLIANCE
with FAMILY FARMERS

A FARMER'S GUIDE TO GROUNDWATER ISSUES IN THE COLUSA SUBBASIN

May 2025

Groundwater Management in the Colusa Subbasin

Farmers that irrigate with groundwater and farm on the eastern side of Glenn or Colusa Counties are using groundwater from an underground source called the Colusa Subbasin. This subbasin is the largest in the Sacramento Valley and falls under the law known as the Sustainable Groundwater Management Act, or SGMA.

SGMA regulates the management and use of groundwater, especially in basins where overdraft, subsidence and other groundwater-related problems are significant. Although groundwater is on average only 37% of the total supply in the Colusa Subbasin, when surface water is scarce as it was during the 2021-2022 drought, many farmers turn to groundwater if they can, and a much larger amount than average is used.

The Colusa Subbasin is managed by the Colusa Groundwater Authority (CGA) and the Glenn Groundwater Authority (GGA) (Figure 1). In 2022, the Authorities submitted their plan (called a Groundwater Sustainability Plan, or GSP) to the Department of Water Resources, the agency that oversees SGMA. In 2023 DWR determined that the plan did not sufficiently address overdraft and land subsidence, nor did it sufficiently consider negative impacts of these problems. The Authorities submitted a revised plan in April 2024 which included a greater commitment to demand management and mitigation of dry domestic wells and which was accepted by DWR in February 2025.

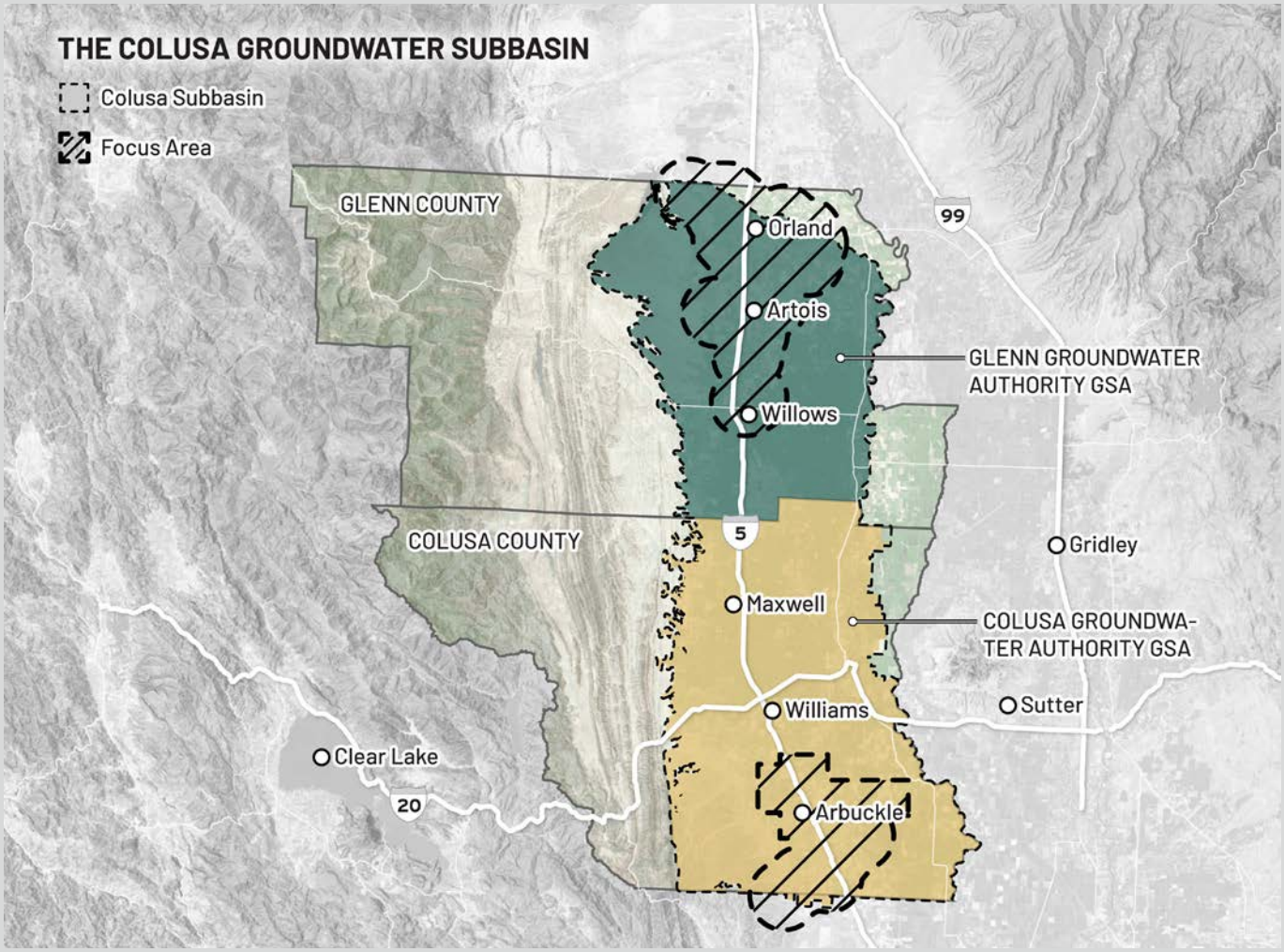


Figure 1: The Colusa Subbasin includes two generalized areas, called Focus Areas in the north and south where land subsidence and groundwater overdraft have been observed. The Authorities will be trying to mitigate these problems with projects and management actions. Illustration by Dudek.

Why Do We Need SGMA?

Sustainable management of groundwater is intended to address specific problems, called "undesirable results," several of which have occurred in the Colusa Subbasin, leading to its designation as "high priority."

Declining Groundwater Levels

In the Colusa Subbasin from 2016 to 2021, an average of 62,000 acre feet per year of groundwater overdraft occurred. As water levels drop, wells can go dry. A lot of dry wells have been reported around Orland in the north and also in the southern part of the Subbasin around Arbuckle and College City. A program to mitigate domestic dry wells resulting from overdraft is being developed by the Groundwater Authorities and is expected to be implemented by January 2026. An ad hoc committee was appointed in May 2024 to work out the details for this program.

Degraded Water Quality

Overdraft can change the direction and velocity of groundwater flow, potentially inducing movement of natural and man-made pollutants. Mobilization of saline water from deeper parts of the aquifer is an example of this and high salinity is a problem in areas surrounding the cities of Maxwell, Colusa, and Williams.

Land subsidence

Subsidence occurs when the surface of the earth sinks as a result of overdraft. Land subsidence can damage expensive infrastructure like roads, canals and schools like the high school in Arbuckle where a history of problems related to land subsidence have been reported. Measurements near Arbuckle revealed approximately 3 inches of subsidence per year between 2008 and 2017 and subsidence of 4 inches per year or more has been recorded in several locations for the period January 2015 through October 2023. A Critical Infrastructure Working Group is planned to establish trigger levels when additional actions to slow down subsidence are needed.

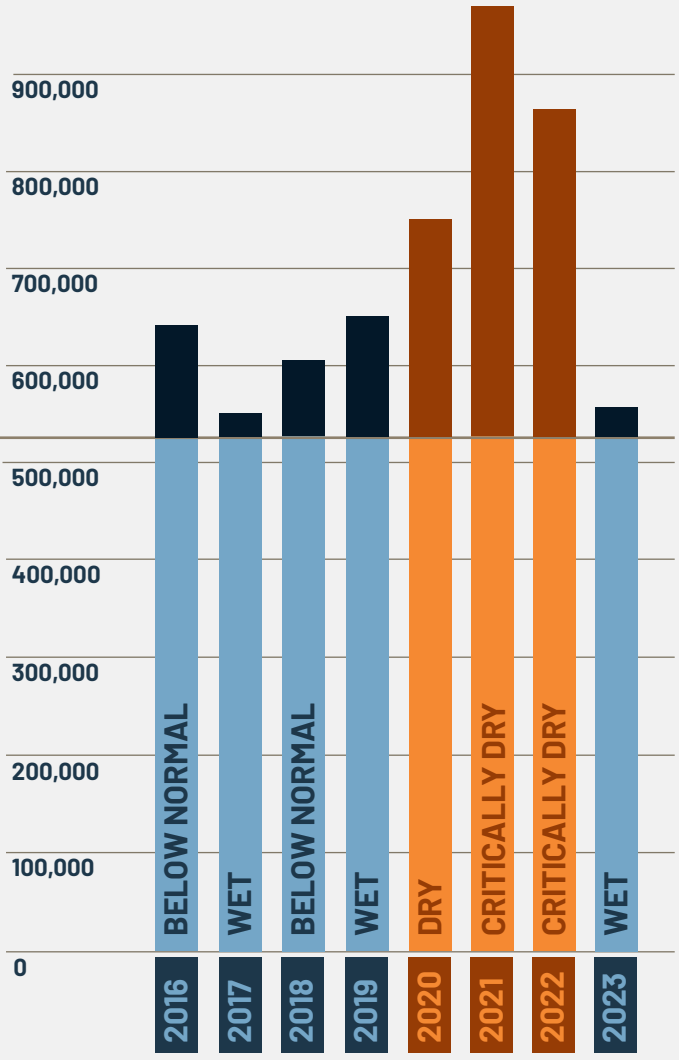
What is Sustainable Groundwater Use?

Groundwater conditions can vary considerably depending on rainfall, location and other factors. The concept of "sustainability" refers to managing the subbasin in a way that allows for continued use of groundwater over time without causing negative environmental, economic or social impacts. To understand what this means at the local level, the Groundwater Authorities developed an estimate of the amount of groundwater that can be used in the Colusa Subbasin while maintaining healthy conditions. This is called the "sustainable yield" and although the amount of groundwater used is expected to fluctuate annually, the sustainable yield provides a helpful gauge.

Annual Groundwater Usage

550,000 AF

The sustainable yield for the Colusa Subbasin was estimated to be between 500,000 and 550,000 acre-feet per year. But groundwater pumping in Water Year 2023, when full surface water allocations were available, was estimated at 577,000 acre-feet, and 96% of that was agricultural, so farmers may need to further conserve the amount of groundwater they use during dry periods.



↑ *Figure 2: The 2022 GSP estimated the sustainable yield to be approximately 500,000 acre-feet per year. (This may be revised lower based on new information.) Groundwater use has been greater than the sustainable yield in every year since 2016, including in several wet years. This indicates that additional water conserving measures may be needed.*

Increase in Perennial Crops

The Colusa Subbasin lies under most of the cropland in Glenn and Colusa Counties. During the decade from 2013 to 2023, perennial crop acreage in the two counties combined increased substantially, by 76,447 acres. For example, almond acreage alone grew by 47,045 bearing acres. During the same period, unirrigated rangeland declined by 36,890 acres according to Cooperative Extension crop reports. This indicates that a significant portion of the new perennial crops were planted on previously unirrigated land and because perennial crops require high initial investments and cannot be fallowed during a drought, the increase in orchard plantings has resulted in a "hardening" of demand for groundwater.

What's coming up?

SGMA requires the Colusa Subbasin to achieve long-term sustainability by 2042 and the revised GSP outlines activities to achieve that. The process will be expensive and although grants and other public funding are available to implement projects, these sources are not sufficient. Both the Colusa and Glenn Groundwater Authorities are charging fees in their service areas to cover the costs of implementing SGMA. In Colusa County, the fees are currently a maximum of $1.21 per acre and in Glenn County the fees vary depending on type of water use ($0.63/acre for dry land, $3.06/acre for surface water users, and $7.18 for groundwater users). Both Authorities are working to update their fee programs, so these amounts will change with decisions likely in 2025. Discussions about fees are conducted publicly — see contact information below.

In addition to the program under development to mitigate dry domestic wells, a program to reduce groundwater demand is also being developed. The Demand Management program will include voluntary measures as well as additional mandatory measures (potentially including groundwater allocations) that will be implemented if needed. An ad hoc committee is developing this program and expects it to be ready for review by January 2027.

Please report dry domestic and agricultural wells to the Dry Well Reporting System:
https://tinyurl.com/47ecw633

If you have difficulty, or need help measuring water levels in your well, contact CAFF. It is important that all dry wells (including agricultural) are reported so that the extent and location of issues can be understood.

Several recharge projects are being planned. In one, conducted in Spring 2025, the GGA used high flows in Stony Creek for recharge onto farmland. This pilot project will benefit both the Corning and Colusa Subbasins with up to 4,999 acre-feet diverted from the Creek. The permit for the project allows the overlying well owners and landowners to use the recharged water for their irrigation needs during 2025 based on a "last in-first out" approach.

How do I get more information?

Community Alliance with Family Farmers

CAFF is partnering with UC ANR Small Farms Network in this work, funded by the Department of Water Resources Underrepresented Communities, California Tribes, and Small Farmers Groundwater Technical Assistance Program. CAFF can connect small farmers with free legal advice through the UC Davis Small Farmers Water Justice Legal Clinic, and technical assistance like well sounding or water testing through Dudek Consulting.
Contact us to find out more about these services! https://www.caff.org/sgma
Kandi Manhart-Belding, 530.934.4601 x3171, kandi@glenncountyrcd.org **or**
Kellie Wilson-Burt, 530.701.6209, kellie@glenncountyrcd.org

Colusa Groundwater Authority

The Colusa Groundwater Authority (https://colusagroundwater.org) has 12 member groups. Their monthly meetings are open to the public.
Carol Thomas-Keefer, 650-587-7300 ext. 17, cthomaskeefer@rgs.ca.gov

Glenn Groundwater Authority

The Glenn Groundwater Authority (https://www.countyofglenn.net/glenn-groundwater-authority) has 10 member groups. Their monthly meetings are open to the public.
Lisa Hunter, 530-934-6540, lhunter@countyofglenn.net

Jane Gray, jgray@dudek.com **805-308-8531**

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