



THE FARMER'S GUIDE TO UNDERSTANDING GROUNDWATER SUSTAINABILITY IN SOLANO COUNTY

May 2025



What is SGMA?

The Sustainable Groundwater Management Act (SGMA), is a law passed by the California legislature specifying requirements for management of groundwater across the state. Groundwater is water stored in underground aquifers which typically accounts for 40-60% of the total annual water used in California, depending on the surface water available from snow and rain during a given year. In 2014, California was in a multi-year drought. The effects of the drought, including some wells going dry and land sinking in some areas, highlighted the need for better management of groundwater in many parts of the state.

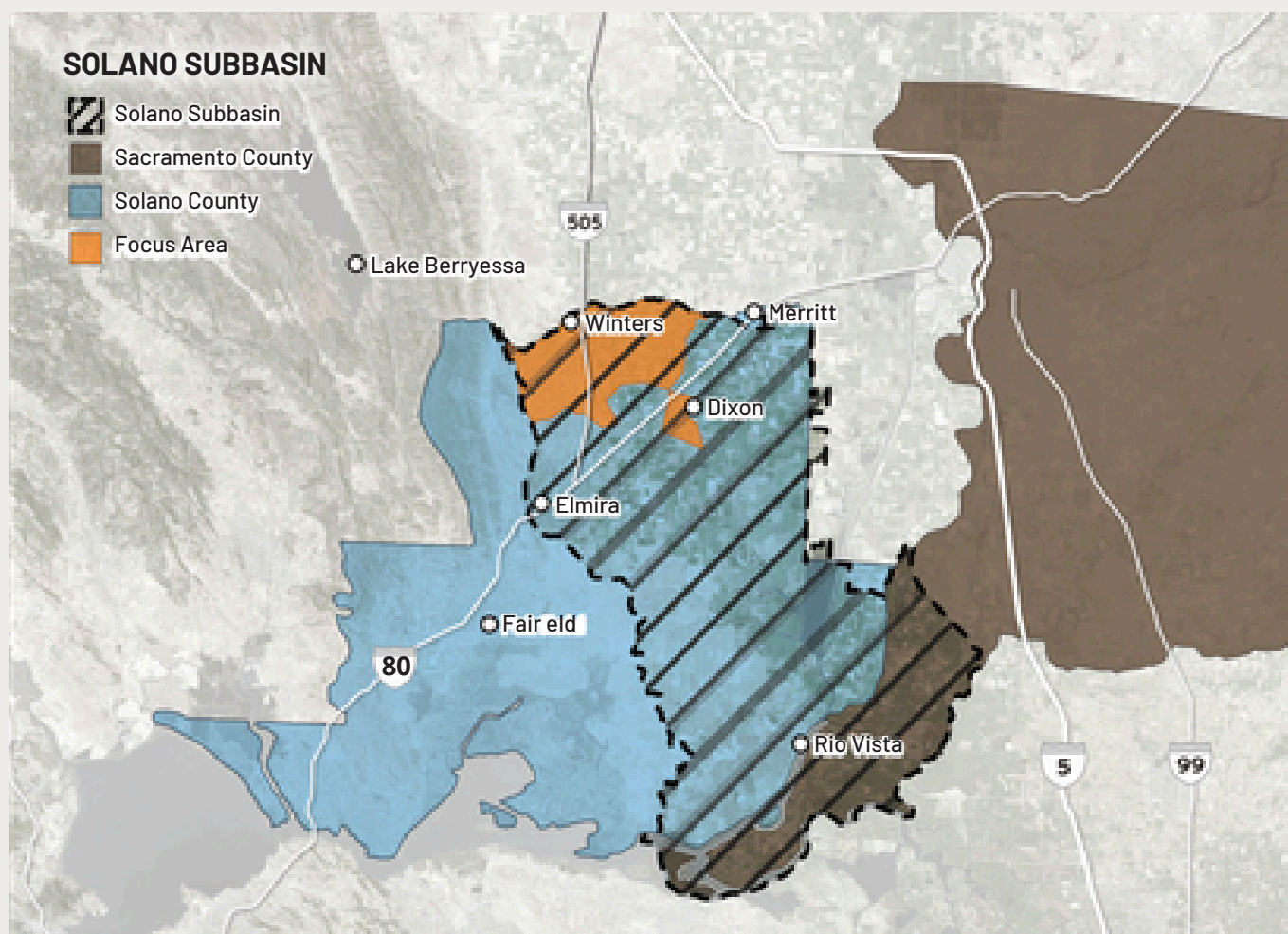
Solano County has significant sources of surface water available from the Solano Project (Lake Berryessa) and water diversions from the Delta. These surface water supplies have limited the demand on groundwater resources, and groundwater in the Subbasin has mostly been stable, especially since the late 1950s and early 1960s after the Solano Project was completed. Groundwater is utilized by both agricultural and urban users in Solano County, although agriculture uses the majority.

Groundwater in most of Solano County comes from the Solano Subbasin, which includes portions of Solano, Sacramento and Yolo Counties (Figure 1). The Solano Subbasin was required by SGMA to develop a Groundwater Sustainability Plan (GSP) because of population, population growth, irrigated acreage, other metrics relating to the reliance on groundwater, and recent groundwater conditions. To implement SGMA, Groundwater Sustainability Agencies (GSAs) were created to manage groundwater resources and develop a plan for achieving and maintaining sustainable groundwater conditions.

This summary is meant to help farmers understand what SGMA is and what to be on the lookout for in Solano County. Funded by the Department of Water Resources (DWR) Underrepresented Communities, California Tribes, and Small Farmers Groundwater Technical Assistance (URCTA) Program, Community Alliance with Family Farmers (CAFF) developed this resource and has staff available to answer questions and connect farmers to groundwater resources.

To figure out what GSA your farm is in,
take a look at this interactive map:
<https://tinyurl.com/mvf83v8v>





↑ Figure 1: Of the 354,600 acres in the Solano Subbasin, the majority are located in Solano County with almost 71,000 acres in Sacramento County and a small section in Yolo County. A generalized area, called the Northwest Focus Area has been defined where declining groundwater levels indicate the need for targeted groundwater management. Map by Dudek.

How Does SGMA Work in Solano County?

The concept of sustainable groundwater management refers to managing groundwater resources in a way that avoids significant and unreasonable adverse environmental, economic or social impacts. To understand what this means at the local level, the GSAs developed an estimate of the amount of groundwater that can be used in the 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. The sustainable yield in the Solano Subbasin is estimated to be

190,000 acre-feet per year and in recent wet years groundwater use has been less than that, which is good! On the other hand, during the dry water years of 2020 and 2021, groundwater use was estimated to be 240,000 acre-feet, significantly more than the sustainable yield.

Implementing SGMA is expensive, and different approaches have been adopted for raising funds to accomplish it. The Solano Subbasin GSAs applied for and were awarded a GSP Implementation grant by DWR to support many early activities. Work supported by the grant includes monitoring and data management enhancements, development of management actions to maintain groundwater sustainability, planning of water supply replenishment and reliability projects, and GSP compliance and outreach activities. Other funding sources are needed to support GSP implementation and fees for landowners and irrigators are being used in

some areas. The Solano Subbasin GSA is funding some costs with an assessment on land parcels in its jurisdiction of up to \$2.79 per acre. This assessment will continue through 2027 when the Solano GSA will reevaluate their budget. Similarly, in the Northern Delta GSA the fee is up to \$2.75 per acre for fiscal years through 2028.



↑ Putah Creek by Lan Ngo

The Northwest Focus Area

There are some parts of the Subbasin where groundwater levels have exhibited recent declines. The GSP identified an area referred to as the Northwest Focus Area (Figure 1) where there is a higher reliance on groundwater, a greater proportion of permanent crops, and recent declines in groundwater levels. Groundwater level declines of 10 to 15 feet have occurred in much of the Northwest Focus Area over the last 25 years, a period of drier than average precipitation. The GSAs are tracking groundwater conditions in many wells across the Subbasin and have installed additional monitoring wells in key areas where the need exists.

The increase in perennial crops in the northern area of the Subbasin may have had an impact

on groundwater levels. According to County Crop Reports, almond orchards in Solano County increased by over 20,000 acres during the decade from 2013 to 2023. Because perennial crops require high initial investments and cannot be fallowed during droughts, they result in a “hardening” of irrigation water demand.

Planning of multi-benefit projects to improve stormwater management and reduce local flooding while providing benefits to groundwater through enhanced recharge, especially in the Northwest Focus Area, is of strong interest in the Subbasin. Because of the Subbasin’s proximity to major surface water features in the Delta and westside tributary streams with periodic availability of stormflow water, including from surface water in Putah Creek and stored in Lake Berryessa, the Subbasin is exploring potential activities involving reducing stormwater runoff and capturing it for use in enhancing groundwater recharge.

GSP Implementation

Implementation of the GSP involves regular monitoring and reporting on conditions in the Subbasin. Implementation activities being conducted by the GSAs include:

Addition of monitoring wells and expansion of automated well monitoring to address data gaps or areas of interest

Public meetings, workshops, newsletters, websites, and an interactive web map (<https://tinyurl.com/mvf83v8v>)

Coordination with Yolo Subbasin on groundwater and interconnected surface water conditions in the northern parts of the Solano Subbasin

Well and surface water diversion inventory

Local water conservation and management support

Developing strategies for enhancing recharge and identification of areas and landowners with interest and characteristics suitable for recharge

Planning related to multi-benefit solutions to address excess stormwater drainage issues in areas of the Subbasin

Pilot project to assess benefits and challenges associated with winter cover cropping

Putah Creek floodplain pilot recharge project planning



↑ Taylor Johnson of Jelly's Ferry Ranch in Rio Vista by Lan Ngo

Increased Development?

The proposal by the real estate development corporation, California Forever, to build a new city or shipbuilding hub in southern Solano County has caused concern for some. The proposed location is mostly on land that is currently dry farmed. The company has secured some water rights from the land that it bought and it is not known if the project would result in impacts to groundwater. In July 2024 Solano County reported that they were working on an Environmental Impact Report and the negotiation and execution of a Development Agreement with California Forever. Suisun City and Rio Vista are exploring opportunities to annex the land owned by California Forever while building a working relationship with the company. Discussions are ongoing and the situation will continue to change after the printing of this document.



↑ Ben Lyons of Lockwood Acres by Lan Ngo

The Bay Delta Plan

Water managers in the County have been paying attention to the proposed update of the Bay Delta Plan. This Plan is used to set standards for water quality and flow conditions for protection of environmental uses in the Delta. In the Draft Update, the State Water Resources Control Board (Water Board) staff proposed an increase in required flows from Putah Creek which would result in a substantial reduction of surface water available through the Solano Project. Since surface water, including the Solano Project, is such a large portion of the overall water supply in Solano County, small farmers could face significant surface water reductions and greater reliance on groundwater if the provisions proposed by Water Board staff in the draft update are adopted.

Recognizing the potential impacts to water

resources, a large coalition of Sacramento Valley organizations, including water agencies in Solano County, developed a "Voluntary Agreement," called the Healthy Rivers and Landscape Proposal, as an alternative. The Voluntary Agreement includes commitments from local water agencies to restore habitat with additional flows, participate in a governance process, and contribute funding to support implementation. This alternate pathway for implementing water quality control in the Bay-Delta is incorporated for consideration and public review in the latest Draft Plan Update released in October 2024. The Water Board will release a new revision after considering public comment. It is important for small farmers to track these developments given the importance of water resources to many farming operations.

How can I get more information?



Community Alliance with FamilyFarmers (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!

Lan Ngo, lan@caff.org, (916) 245-6519, www.caff.org/sgma



The Solano Subbasin GSA Collaborative

includes GSAs in the Solano Subbasin and meets regularly. The Collaborative posts their meeting notes after each meeting (www.solanogsp.com/solano-collaborative). Individual GSAs within the Subbasin have regular Board meetings, which are open to the public. The Collaborative typically hosts a public Virtual Town Hall each Spring. Additionally, the GSA Collaborative shares an e-newsletter with periodic updates. You can sign up here: www.solanogsp.com

To learn about activities in the Subbasin, contact: **Guadalupe Garcia**, guadalupe@aginnovations.org

Dixon Resource Conservation

District holds an annual Groundwater Workshop and provides technical, financial and educational resources for drainage, water quality and habitat management.

www.dixonrcd.org

Solano Resource Conservation

District works on a variety of projects including environmental education and outreach, habitat restoration and conservation, wildfire prevention and post fire recovery.

www.solanorcd.org

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California Department of Water Resources (DWR) Underrepresented Communities, California Tribes, and Small Farmers Groundwater Technical Assistance (URCTA) Program
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This outreach document provides basin or subbasin specific information and identifies local groundwater management actions that may affect small scale farmers in these areas. This document does not reflect official positions or regulatory standards applied or used by the Department when administering its function under SGMA.

Photos by Lan Ngo