

Senate Natural Resources and Water Committee (Limón, Chair)
Informational Hearing

**Sustainable Groundwater Management Act at 11 Years:
Progress and Challenges**

*March 11, 2025, 9:00 a.m.
1021 O Street, Room 2100*

Executive Summary

Groundwater basins provide approximately 40% of California’s water supply in average hydrologic years and 60% in dry years. Until 2014, groundwater use was largely unregulated in California, resulting in groundwater depletion (“overdraft”), sea water intrusion, land subsidence, and water quality contamination, among other issues. Under the Sustainable Groundwater Management Act (SGMA), enacted in 2014, local agencies, through the formation of groundwater sustainability agencies (GSAs), are required to implement groundwater sustainability plans (GSPs) to manage groundwater sustainably and subject to state review. Millions of people depend on the sustainability of groundwater, and SGMA was enacted with the intent to ensure a sustainable groundwater supply for all. Groundwater basins most at risk were required to meet SGMA requirements first. These agencies have until the early 2040s to achieve sustainability while also avoiding “undesirable impacts.” Under certain circumstances, a groundwater basin’s sustainability plan may be deemed inadequate and subject to state intervention. In such cases, the basin may be put on probation, and the State Water Resources Control Board (State Water Board) may develop a temporary interim groundwater sustainability plan for that basin.

As of now, 86 basins have approved GSPs, and six basins have been deemed inadequate: Delta-Mendota Subbasin, Chowchilla Subbasin, Tulare Lake Subbasin, Kaweah Subbasin, Tule Subbasin, and Kern County Subbasin. Of these basins, Tulare Lake Subbasin and Tule Subbasin have been designated as “probationary.” The probationary designation for the Tulare Lake Subbasin has been suspended, however, due to ongoing litigation.

SGMA has been in force for 11 years and is now moving into the implementation phase. As this phase progresses, implementation challenges faced by various groups are coming into focus. Some groups, such as small farmers, disadvantaged communities, and Native American communities, face representation challenges in GSAs. Some GSAs have struggled to receive state approval of their sustainability plans, and others, who have state-approved plans, now face financing hurdles for projects necessary to achieve and maintain compliance.

This background paper will review SGMA and provide an overview of its processes and implementation to date. This includes a brief description of the groundwater basin adjudication process, and a discussion of some of the achievements under SGMA and outstanding challenges faced by many in being included in or complying with SGMA.

Groundwater and the Sustainable Groundwater Management Act

Groundwater is any water found beneath the land surface in pores and fractures in materials such as rock, gravel, or sand. According to the Department of Water Resources (DWR), groundwater provides nearly 40% of California's water supply in an average year and 60% in drought years. Groundwater is a major source of the state's drinking water supply; approximately 33 million Californians - including almost everyone who lives in rural areas - use groundwater for drinking or other household uses (either from a public water supply or a private domestic well). More than 9 million Californians rely solely on groundwater to meet their needs, including people in disadvantaged communities struggling to get clean drinking water.¹ Groundwater is also used in agriculture to irrigate crops, and in industry and manufacturing for cooling and rinsing. Additionally, groundwater replenishes streams, creeks, rivers, and wetlands that support wildlife (including threatened and endangered species).

For most of California's history, there was no statewide mandate for the management of groundwater. Historically, significant over-pumping (or overdraft) of groundwater in many regions of the state, resulted in the emptying the aquifers faster than they could naturally be replenished. This overdraft in many areas has resulted in numerous adverse impacts including land subsidence that compromised infrastructure, dewatering of rivers and streams, seawater intrusion in coastal area aquifers, depletion of surface water supplies, increased risk of water contamination, and dried out domestic and agricultural groundwater wells, among other adverse impacts.

Enacted in 2014, SGMA made California the last state in the West to adopt a statewide groundwater management system. SGMA was made up of three bills: SB 1168 (Pavley), SB 1319 (Pavley), and AB 1739 (Dickinson). These three bills provide a framework for sustainable groundwater management with the goal of managing and using groundwater without causing undesirable results. Both state level water agencies play distinct roles in SGMA.

Groundwater Sustainability Agencies. Under SGMA, a local agency or combination of local agencies overlying a groundwater basin may become a groundwater sustainability agency (GSA) for that basin. A GSA has broad management authority of the groundwater basin or basins under their jurisdiction including defining the basin's or basins' sustainable yield, limiting groundwater extraction, and imposing fees. GSAs are required to consider the interests of all beneficial uses and users of groundwater, including, but not limited to, holders of overlying groundwater rights, municipal well operators, public water systems, local land use planning agencies, environmental users of groundwater, surface water uses, the federal government, California Native American tribes, and disadvantaged communities. GSAs are authorized to perform any act necessary to carry out the purposes of SGMA, including adopting rules, regulations, and ordinances and developing the groundwater sustainability plan or GSP.

¹ Layperson's Guide to Groundwater, Water Education Foundation, updated 2017.

Groundwater Sustainability Plans. Out of the 515 groundwater basins in the state identified by DWR in Bulletin 118,² 94 basins are required to comply with SGMA. DWR has characterized basins as high priority, medium priority, low priority, and very-low priority based upon certain criteria such as population, rate of population growth, and number of wells. GSAs in medium- and high-priority groundwater basins, which includes 21 critically overdrafted basins, were required to develop and implement GSPs that would achieve groundwater management, and ensure the basin is operated within its sustainable yield and avoids undesirable results. Undesirable results include:

- Chronic lowering of groundwater levels;
- Significant and unreasonable reduction of groundwater storage;
- Significant and unreasonable seawater intrusion;
- Significant and unreasonable degraded water quality;
- Significant and unreasonable land subsidence that substantially interferes with surface land uses; and
- Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of surface water.³

GSPs, which have a 20-year implementation schedule and a 50-year planning horizon, must include, among other things, measurable objectives, monitoring and management of groundwater levels within the basin, and monitoring protocols. GSPs must consider control of saline water intrusion, wellhead protection areas and recharge areas, migration of contaminated groundwater, a well abandonment and well destruction program, replenishment of groundwater extraction, measures addressing groundwater contamination cleanup, and impacts on groundwater dependent ecosystems, among others. GSAs may additionally customize their GSPs to their regional economic and environmental circumstances.

GSPs can be a single plan covering an entire basin developed and implemented by one GSA; a single plan covering the entire basin developed and implemented by multiple GSAs; or multiple plans implemented by multiple GSAs. When there is more than one GSP for a basin, the GSAs must jointly submit the GSPs to DWR, and DWR evaluates the GSPs to ensure they are coordinated to achieve groundwater sustainability.

Before developing a GSP, GSAs are required to inform the public and DWR how interested parties can participate in GSP development and implementation and must hold at least one noticed public hearing. After the adoption of a GSP, a GSA or other organization also have the option to file an action in the superior court to determine the validity of the GSP.

² <https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>; last accessed March 3, 2025. *California's Groundwater* (Bulletin 118) is the State's official publication on the occurrence and nature of groundwater in California. The publication defines the groundwater basin boundaries and summaries groundwater information for each of the State's 10 hydrologic regions. The next update to *California Groundwater* will be published this year.

³ Water Code §10721(x)

Additionally, GSAs are required to annually submit a report to DWR that contains information on groundwater elevation data, annual aggregated data identifying groundwater extraction for the preceding water year, and surface water supply used for or available for use for groundwater recharge.

SGMA requires GSAs to periodically evaluate GSPs to assess whether amendments are necessary. Such amendments can be adopted after a public hearing and review, and consideration of comments received. DWR is required, at least every 5 years, to review GSPs for consistency with SGMA and is required to assess basin progress in achieving sustainability.

GSP Implementation. GSAs are required to begin GSP implementation upon submittal to DWR. If a GSP is approved, plan implementation continues, and the GSA has until either 2040 or 2042, depending on whether the basin is high- or medium-priority, to achieve sustainability.

State agency intervention. “The foundation of [SGMA] is that groundwater is best managed at the local level, and the State’s primary role is to provide guidance and support.”⁴ Thus, while SGMA provides for the sustainable management of groundwater basins, it does so by empowering local agencies to manage groundwater basins, while minimizing state intervention. However, SGMA authorizes state intervention in limited circumstances, including if it determines that a GSP is inadequate or not being implemented in a manner that will achieve sustainability.

State intervention is a process that *could* result in the State Water Board temporarily managing and protecting groundwater resources until local agencies are able to do so adequately. There are several steps in the intervention process:

- 1) *DWR’s initial assessment.* During its evaluation of a GSP, DWR assesses the GSP to determine if it complies with SGMA, substantially complies with GSP regulations, and whether implementation of the GSP is likely to achieve the sustainability goal for the basin. DWR’s evaluation and assessment is based on criteria outlined in its GSP regulations. If DWR finds that the GSP of a basin is incomplete during their initial assessment and evaluation, DWR provides an additional 180 days for the GSA to cure any deficiencies. During this time, DWR works with the GSA to explain the issues that precluded the GSP’s approval.
- 2) *DWR re-evaluation.* After the GSP is resubmitted, DWR reviews the GSP again, and, if the deficiencies are still not cured, DWR can find the basin inadequate, triggering state intervention by the State Water Board.
- 3) *State Water Board intervention.* Once state intervention is triggered, the State Water Board considers whether the basin should be designated as a probationary basin. This is done through a noticed public hearing.
- 4) *Basin designated as “probationary.”* If, after the public hearing, the State Water Board designates the basin as “probationary,” the probationary period begins and the GSA has at

⁴ DWR website, <https://water.ca.gov/Programs/Groundwater-Management/Assistance-and-Engagement>, last accessed 2/24/2025).

least one year to address the issues, or deficiencies, that caused the probation. The State Water Board is required to identify specific deficiencies and potential actions to address those deficiencies. The State Water Board may also request that DWR provide local agencies with technical recommendations to remedy deficiencies.

- 5) *Probationary period.* During the probationary period, the State Water Board focuses on data collection and analysis to better understand management challenges in the basin. The State Water Board may require the installation of meters to help measure groundwater extraction and require well owners to file groundwater extraction reports. To cover the costs of state intervention activities, the State Water Board may require people who pump groundwater to file extraction reports and pay extraction fees.
- 6) *Interim plans.* If the issues that caused the basin to go on probation are not addressed during the probationary period, the State Water Board may begin another public process to determine whether to implement an interim plan for the basin. An interim plan cannot be implemented until the GSA has been allowed at least one year to correct the GSP deficiencies. If the State Water Board adopts an interim plan, the State Water Board temporarily manages the groundwater in the basin until the GSA can demonstrate their ability to manage the basin sustainably and resume management.
- 7) *Ending state intervention.* To end state intervention, GSAs are required to demonstrate to the State Water Board, in consultation with DWR, their ability to manage groundwater sustainably and address the issues that led to state intervention.

SGMA and Adjudications

Some groundwater basins may be subject to legal adjudication; how these adjudications will be resolved in context of SGMA is unknown. A groundwater adjudication is when parties ask a court to determine groundwater rights and/or to limit pumping to a basin's "safe yield"⁵. Groundwater adjudications can cover an entire basin, a portion of a basin, or a group of basins, and may include non-basin areas. The court decides who can extract groundwater, how much they are allowed to extract, and designates a watermaster to ensure the adjudicated areas are managed in accordance with the court ruling.

Determining who has groundwater rights that could be affected by an adjudication and the scope of those rights is difficult, and can be a lengthy process; adjudications typically take more than a decade to resolve. Various pieces of legislation have been passed in an attempt to streamline the groundwater adjudication process and reconcile the process with SGMA.

⁵ The courts have defined "safe yield" as the amount of groundwater pumped that is equal to the average replenishment rate of a groundwater basin.

Committee staff is aware of five pending groundwater adjudications:

- Santa Clara Valley – Oxnard (No. 4-004.02) and Pleasant Valley (No. 4-006) groundwater basins, commenced in December 2022. (*OPV Coalition et al. v. Fox Canyon Groundwater Management Agency et al.*)
- Cuyama Valley groundwater basin (No. 3-013), commenced in March 2022. (*Bolthouse Land Company, LLC et Al. v. All Persons Claiming a Right to Extract or Store Groundwater in the Cuyama Valley Groundwater Basin*)
- Indian Wells groundwater basin (No. 6-54), commenced in November 2021. (*Indian Wells Valley Water District v. All Persons Who Claim a Right to Extract Groundwater in the Indian Wells Valley Groundwater Basin, etc. et al.*)
- Upper Ventura River (No. 4-3.01), Ojai Valley (No. 4-2), Lower Ventura River (No. 4-3.02), and Upper Ojai Valley (No. 4-1) groundwater basins, commenced in November 2019. (*Santa Barbara Channelkeeper v. SWRCB, et al.*)
- Las Posas Valley groundwater basin (No. 4-8), commenced in November 2018. (*Las Posas Valley water Rights Coalition et. al v. Fox Canyon Groundwater Management Agency et al.*)

An additional adjudication in the Borrego Valley groundwater subbasin (No. 7-024.1) commenced in July 2020; the court approved a stipulated judgment to settle this adjudication on April 8, 2021 and the case is no longer active.

SGMA Status Update

According to DWR’s website, over 260 GSAs in over 140 basins have been formed. This number is likely to change over time as new GSAs may form and existing GSAs will reorganize, consolidate, or withdraw from managing the basin.

On January 18, 2024, DWR completed the initial GSP reviews for all basins that were required to submit plans by January 31, 2022. DWR approved 71 basins, deemed 13 basins incomplete, and 6 basins inadequate. The basins that have been deemed inadequate are the Delta-Mendota Subbasin, Chowchilla Subbasin, Tulare Lake Subbasin, Kaweah Subbasin, Tule Subbasin, and Kern County Subbasin. The table on the following page summarizes the current status of these six basins.

Additionally, although not included in the table below, the Upper San Luis Rey Valley Subbasin is also subject to state intervention due to areas of the basin being unmanaged.

Status of Basins Subject to State Intervention

Basin	Location	Status
Delta-Mendota Subbasin	San Joaquin, Stanislaus, Merced, Fresno, Madera, and San Benito counties	Revised 2020 GSP deemed inadequate by DWR in March 2023, probationary hearing not yet set by State Water Board.
Chowchilla Subbasin	Cadera and Merced counties	Revised 2020 GSP deemed inadequate by DWR in March 2023, probationary hearing not yet set by State Water Board.
Tulare Lake Subbasin	Kings County	Tulare Lake Subbasin designated as probationary on April 16, 2024. However, due to ongoing litigation actions related to the probationary designation have been suspended
Kaweah Subbasin	Tulare and Kings counties	Probationary hearing set for January 7, 2025 cancelled due to substantial progress to address identified inadequacies in the amended GSPs, and to allow State Water Board staff time to review amended GSPs.
Tule Subbasin	Tulare County	Designated as probationary in September 2024. Extractors required to start tracking groundwater use January 1, 2025, and submit annual reports beginning February 1, 2026.
Kern County Subbasin	Kern County	Probationary hearing continued until September 2025 to provide Kern County GSAs more time to resolve deficiencies in GSPs. GSAs are required to revise GSPs by June 20, 2025.

Considerations for the Legislature

Below are brief overviews of various community partners’ experiences with SGMA. While these descriptions are not exhaustive, or intended to represent all organizations, they should give a sense of the great impact SGMA has on the residents of California. During the 2025 – 26 Legislative Session, members may wish to consider some of these challenges as they evaluate legislative proposals relating to SGMA.

Agriculture. One of the main concerns that face the agriculture community is the amount of land that will be required to be fallowed in order for a region to reach sustainability. Estimates suggest a loss of up to 500,000 planted acres, and many also fear the loss of jobs and resulting damage to the regional economy. This concern is especially felt by family-owned small and medium sized farms. While many farmers support the goal of SGMA, some feel there is not enough time to adjust their business models to make them both compatible with SGMA and financially feasible.

The agricultural community also experiences outreach and communication challenges with both their local GSAs and state agencies. A recent study by CSU Water (Water Advocacy Toward

Education and Research) of San Joaquin Valley farmers⁶ found that about a third of the respondents felt that their interests were not well represented by their GSA, citing a lack of trust between farmers and the GSA, and not receiving clear information. The survey concluded that GSAs needed to focus on improved community, building community trust, and broader representation.

Disadvantaged communities. Achieving groundwater sustainability can involve the implementation of costly projects, which GSAs must figure out how to finance. Although GSAs have the authority to raise fees to pay for the various projects and activities needed to implement GSPs, passing those costs onto the ratepayers may not be an option for GSAs whose ratepayer base cannot afford them. Further, if a disadvantaged community relies on water extracted from a basin that is subject to adjudication, often the communities have limited ability to access and understand the adjudication process, which can negatively impact their rights.

Groundwater Sustainability Agencies. GSAs also face multiple challenges. GSAs vary greatly throughout the state in not only structural makeup, but also types of challenges faced in groundwater management. What works for one may not work for others. For example, while many GSAs in the Central Valley are combatting the issue of overdraft, central coast GSAs may be battling the challenge of salt water intrusion. While larger GSAs may be able to rely on economies of scale to cover their administrative costs, smaller GSAs may consider those same costs significant. Some basins have dozens of GSAs, each with their own GSPs, requiring those GSAs to coordinate with one another. Some GSAs find themselves in basins that are subject to a groundwater adjudication, an action which could potentially create complications with the state-approved GSP.

Timing has also been a concern for many GSAs. Although SGMA was passed 11 years ago, implementation is still in the early stages. Only 3 – 5 years have passed since GSAs submitted their GSPs to DWR for review. However, these years coincided with drought conditions making water unavailable for aquifer recharge and historic demands on groundwater to meet supply needs. With an early 2040 deadline to achieve sustainability, GSAs are grappling with the funding and high costs of projects needed to achieve sustainability in their region in 15 years. According to some, state and local funding is unreliable and often insufficient. Many GSAs are understaffed and some feel that state permitting required to implement projects can be difficult to navigate and expensive. Additionally, expectations from state permitting agencies can vary widely and change over time, making compliance confusing and difficult in some cases.

California Native American Tribes. SGMA requires GSAs to consider the interests of all beneficial uses and users of groundwater, including California Native American tribes; however, SGMA does not appear to require consultation or coordination with all groups. The extent that a California Native American tribe is involved in the local SGMA process can vary between GSAs. While it appears that some GSAs have a tribal member on their board of directors, others do not. It is unknown how comprehensively all 260 GSAs have considered tribal interests or included tribal representation in GSA leadership.

⁶ www.fresnostatenews.com/2025/02/07/new-farmer-focused-survey-reveals-barriers-to-sustainable-groundwater/;
last accessed March 1, 2025

Related Legislation

AB 293 (Bennett, 2025) would require each GSA to publish the membership of its board of directors on its internet website or on the local agency's website and would require each GSA to publish a link on its website or on the local agency's website to the Fair Political Practices Commission's website where the statements of economic interests, filed by the members of the board and executives of the agency, can be viewed. This bill is in the Assembly pending referral.

AB 709 (Gonzalez, 2025) would specify that GSAs that have developed multiple GSPs for a basin are not prohibited from amending the coordination agreement. This bill is in the Assembly pending referral.

AB 1044 (Macedo, 2025) would create the Tulare Basin Groundwater Sustainability Agency and deem the Tulare Basin Groundwater Sustainability Agency the exclusive agency with powers to comply with SGMA. This bill is in the Assembly pending referral.

AB 1466 (Hart, 2025) would provide that in any action to adjudicate groundwater rights, if a party to the action is seeking judicial review of an action taken by a GSA pursuant to a GSA adopted after January 30, 2020, that party has the burden of proof. This bill is in the Assembly pending referral.

AB 828 (Connolly, 2024) would have required GSPs to include, among other things, the plan's water supply and economic impacts on managed wetlands and small community water systems serving disadvantaged communities and would have temporarily exempted managed wetlands and small community water systems serving disadvantaged communities from specified authorities of GSAs to regulate groundwater pumping under SGMA until a GSP has been approved after January 1, 2025.

AB 2079 (Bennett, 2024) would have required greater interagency coordination and public notice regarding applications to drill water wells and would have prohibited a local agency from approving new "large-diameter, high capacity" wells within one-quarter mile of domestic wells and areas of significant land subsidence. This bill died in this Committee.

AB 2799 (Alanis, 2024) would have required a GSA to consider the efforts of small farms that recharge groundwater into the basin upon which their property is located when imposing or increasing fees. This bill died in this Committee.

SB 1156 (Hurtado, Chapter 458, Statutes of 2024) requires members of the board of directors and the executive of a GSA to file statements of economic interests.

AB 429 (Bennett, 2023) would have prohibited a local agency from issuing a permit for a groundwater well in a critically overdrafted basin until it has written verification from the relevant GSA determining that the well is consistent with sustainable groundwater management and determines that the well will not interfere with existing nearby wells. This bill died in the Assembly Water, Parks, and Wildlife Committee.

AB 560 (Bennett, 2023) would have required parties to a groundwater management adjudication action to submit a proposed settlement agreement, before filing it with the court, to the State Water Board for a nonbinding advisory determination regarding its impact on sustainable management and small and disadvantaged users. This bill died on the suspense file in Senate Appropriations Committee.

AB 779 (Wilson, Chapter 665, Statutes of 2023) enacted various changes to procedures governing comprehensive groundwater adjudications and SGMA designed to address transparency regarding the adjudication process, ensure that the water use of small farms and disadvantaged communities have been considered by a court before a judgement is entered, and specify that monitoring and reporting under an approved GSP continues throughout the duration of the adjudication proceeding.

AB 1563 (Bennett, 2023) would have prohibited permitting agencies from approving permits for certain new groundwater wells or altering certain existing well permits in a critically over-drafted basin subject to SGMA unless certain conditions are met. This bill died in the Senate Local Government Committee.

SB 315 (Hurtado, 2023) would have required the State Water Board to provide clear benchmarks and guidance for GSAs to improve their GSPs, among others things. This bill died on the suspense file in the Senate Appropriations Committee.

SB 651 (Grove, 2023) would have required the Judicial Council to adopt a rule of court to establish procedures requiring actions or proceedings brought to attack, review, set aside, void, or annul the certification of an environmental impact report, or the granting of any project approvals, for groundwater recharge projects that implement a GSP or an interim GSP be resolved within 270 days, as specified. This bill died in the Assembly Natural Resources Committee.

SB 1220 (Hurtado, 2022) would have specified that GSAs that have multiple GSPs for a basin are not prohibited from amending the coordination agreement. This bill died in this Committee.

AB 2201 (Bennett, 2022) would have prohibited local agencies from approving permits for new or altered wells unless specified conditions are met. This bill died on the Assembly Floor on concurrence.

AB 2857 (Bauer-Kahan, 2022) would have required a GSP include measures to mitigate adverse impacts on domestic wells and would have prohibited a mitigation measure from subjecting an owner of a domestic well or a user of water from a domestic well to an unreasonable financial burden or expense. This bill died in the Assembly Water, Parks, and Wildlife Committee.

SB 1372 (Stern, Chapter 682, Statutes of 2022) prohibits the approval of a GSP by DWR from being construed to be a determination or opinion of DWR that the allocation of groundwater pumping rights in the plan are consistent with groundwater rights law.

AB 2502 (Quirk, 2020) would have added impacts to managed wetlands to the additional analyses that GSPs are required to contain. This bill died in the Assembly Water, Parks, and Wildlife Committee.

AB 321 (Mathis, Chapter 67, Statutes of 2017) specifically included farmers, ranchers, and dairy professionals in the agricultural users whose interests a GSA is required to consider.