



Mind the Gaps: The Case for Truly Comprehensive Sustainable Groundwater Management

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California took a major step toward sustainable groundwater with the passage of the 2014 Sustainable Groundwater Management Act (SGMA). Despite groundwater's crucial importance in meeting the state's water needs, and a long history of groundwater overdraft, for over a century no statewide management of groundwater supply existed. SGMA sought to change that through a combination of state mandates and local management. Unfortunately, California's effort to fill that major regulatory hole has left smaller regulatory gaps that continue to pose significant obstacles to effective groundwater governance.

Major SGMA Gaps

SGMA defines groundwater broadly as any "water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water." Because SGMA requires local regulation of each groundwater basin, SGMA had to determine the boundaries of those groundwater basins. SGMA does this by referencing Bulletin 118 — recently rebranded as "California's Groundwater" — a publication in which the California Department of Water Resources (DWR) defines individual basins.

Unfortunately, Bulletin 118 creates two regulatory gaps, by:

1. defining only alluvial basins and not fractured hard-rock and volcanic aquifers; and

2. not defining the basin bottom, which allows local agencies to exclude lower lying brackish groundwater by defining the basin bottom as above that brackish groundwater.

SGMA also creates a third gap by requiring regulation only in alluvial basins ranked as medium or high priority by DWR — even though pumping in low and very-low priority basins can lead to undesirable results, such as depletion of streamflow. DWR has ranked only 18 percent of Bulletin 118 groundwater basins as medium or high priority.

Closing the Gaps

Multiple levels of government can help to close these gaps and SGMA already contains much of the authority needed to ensure comprehensive management by either state or local agencies. If these agencies do not adequately address the problem, the legislature needs to step in to ensure the sustainable management of all California groundwater.

Recommended State Administrative Actions

DWR has significant authority to mitigate or eliminate the gaps that currently exist. DWR can start by:

1. Scrutinizing the manner in which GSAs define their basins to include both freshwater and brackish groundwater where appropriate.

2. Defining fractured hard rock and volcanic aquifers (which DWR labels “non-basin areas”) as groundwater basins in Bulletin 118.
3. Changing prioritization formulas to increase the priority of basins in low population areas, such as deserts, that face significant threats from harmful overdraft.
4. Providing periodic review of basin priorities to ensure that changes in prioritization are proactive rather than reactive.

DWR and the State Water Resources Control Board (SWRCB) should also sponsor the development of accessible numerical and analytical models for state agencies, counties and consultants to assess groundwater pumping impacts of new wells on surface water, ecosystems and other existing wells. And the SWRCB should consider additional groundwater protection or mitigation measures in its development and adoption of a permanent Cannabis Cultivation Policy. If SWRCB does not have adequate authority, the legislature might want to provide it.

Recommended Local Administrative Actions

Local agencies also can help cure the remaining gaps in California’s sustainable groundwater management in the following ways:

1. Defining basins to include brackish groundwater where appropriate.
2. Creating local GSAs for low and very-low priority basins with the ability to exercise the powers awarded to GSAs under SGMA.
3. Providing comprehensive management equivalent in scope and goals to Groundwater Sustainability Plans in medium and high priority basins by taking important interim steps, such as collecting data to evaluate local groundwater conditions and implementing groundwater management quickly when needed.
4. Ensuring pumping will not cause significant harm to existing groundwater users (including the environment) or deplete surface water, before issuing new well permits. Web-based decision-support tools, such as analytical groundwater surface water models, can assist the evaluation of pumping impacts.
5. Enacting permitting rules designed to avoid the most likely local impacts, particularly to local surface water uses.

Recommendations for New State Legislation

The California legislature ultimately may need to amend or supplement SGMA to close problematic gaps and should consider legislation that would:

1. Provide groundwater management through a different geographical scheme, such as by watershed rather than basin, for non-alluvial basins.
2. Create different management rules for non-alluvial basins than SGMA requires for alluvial basins to fit management rules to the nature of the problem. For example, non-alluvial basins could adopt plans that include data-gathering (e.g., permitting and metering for non-de minimis uses) and basic, easy-to-administer permitting rules for avoiding serious impacts (e.g., well-density limits and setback rules near streams or sensitive habitats).
3. Adopt a new tiered-priority system for managing groundwater basins, requiring basins to adopt different scopes of management based on each basin’s priority.

Public Trust Responsibilities

As the California Court of Appeals has ruled, the state has an obligation to manage groundwater extractions that might negatively impact the environment of navigable surface waters. The public trust doctrine in California protects such waters and requires the state to ensure groundwater production does not harm those waters. Where groundwater pumping poses such a threat, all agencies of the state have a legal obligation to address and mitigate that threat. The gaps that remain in the sustainable management of California groundwater therefore not only pose a policy challenge but, in some cases, also trigger a public-trust obligation. Because all citizens of California have a right to sue to enforce the public trust doctrine, moreover, the failure to eliminate gaps that threaten navigable surface waters also poses a legal risk to the state and its agencies. Local agencies might want to act to address the gaps on their own to avoid public-trust lawsuits, as well as to avoid liability under the Endangered Species Acts or other federal and state environmental statutes.

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This summary was created based on information from the original report “[MIND THE GAPS, THE CASE FOR TRULY COMPREHENSIVE SUSTAINABLE GROUNDWATER MANAGEMENT.](#)”
