California's Sustainable Groundwater Management Act (SGMA)

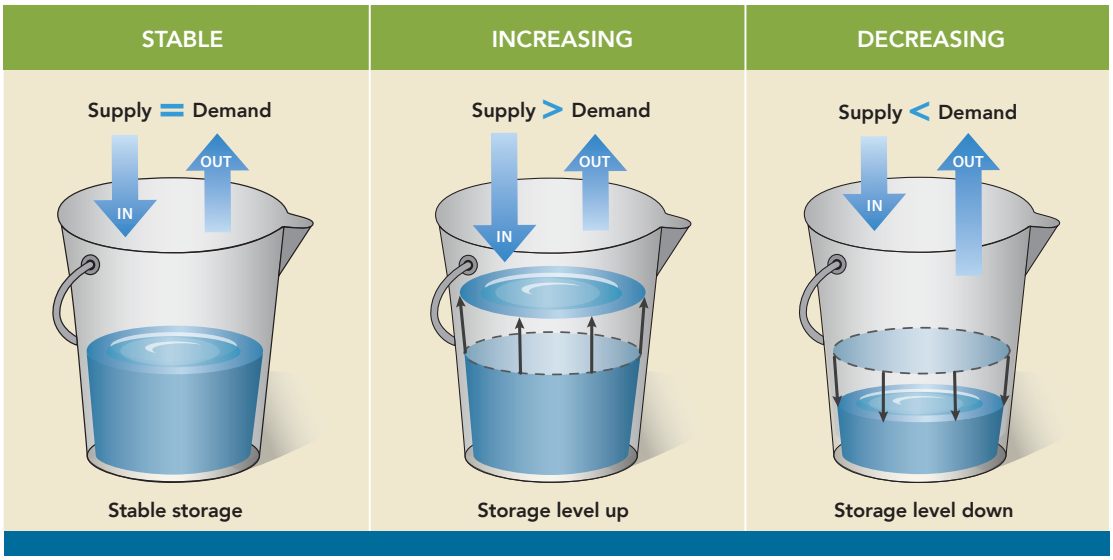
Reduction of Storage

NO. 2
UNDESIRABLE RESULT

Factors that affect groundwater storage.

Groundwater storage in an aquifer varies over time, increasing when replenished by infiltration and recharge from surface water, precipitation, and irrigation, and decreasing when groundwater discharges to surface water or when groundwater pumping occurs. Reductions in groundwater storage are reflected in falling groundwater levels and can occur when the volume of groundwater pumped exceeds the volume replenished, year over year. SGMA requires that Groundwater Sustainability Plans (GSPs) address significant and unreasonable reductions of groundwater storage.

Groundwater Storage Fluctuations



Supply (inflow):
- Precipitation
- Recharge
- Contributions from surface water

Demand (outflow):
- Evapotranspiration
- Beneficial users
- Contributions to surface water

Why can groundwater storage decrease?

Like a bank account, the amount of available groundwater storage volume in a basin is supplemented by groundwater inflows from precipitation, recharge, and contributions from surface water (deposits) and is depleted by pumping by beneficial users and discharge to surface water (withdrawals). When groundwater withdrawals exceed inflows and recharge, groundwater storage (the account balance) is reduced. Like a household budget, a groundwater budget can be developed to evaluate groundwater inflows and outflows to guide management decisions. Measurements of groundwater levels, precipitation, streamflow, and evapotranspiration can be used in conjunction with computer groundwater models to develop a groundwater budget and help guide the development of the GSP.

Why does groundwater storage matter?

How does groundwater pumping affect groundwater storage?

How might this impact future groundwater pumping?

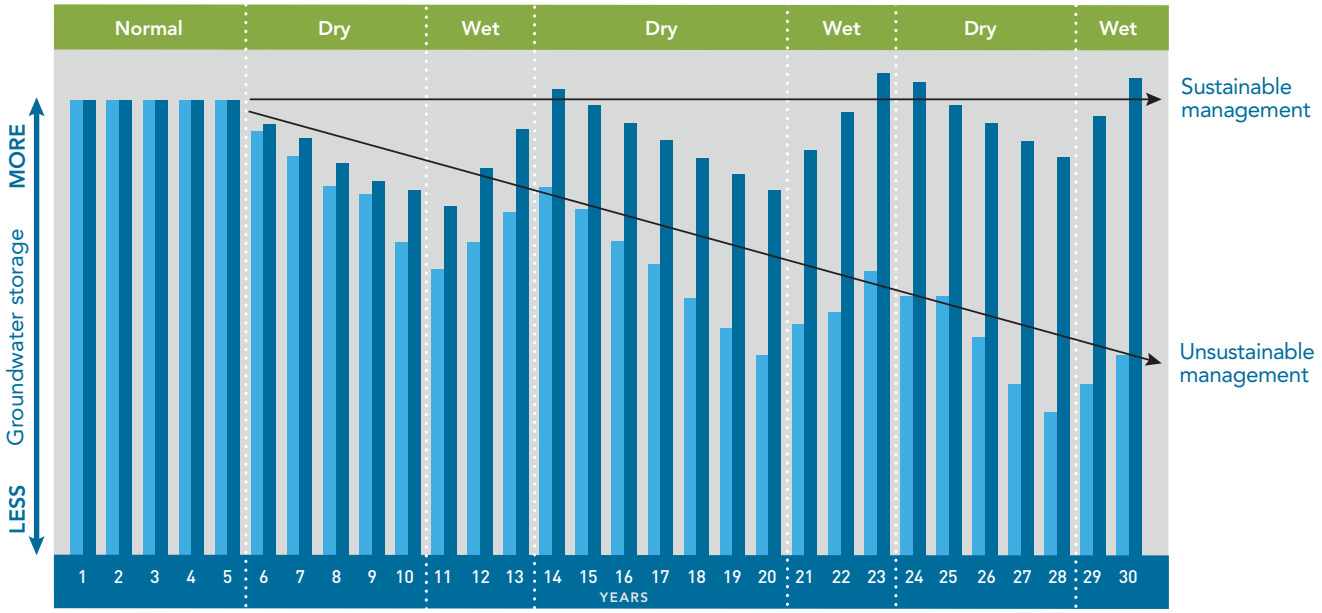
How do decreases in groundwater storage affect me and my community?

Long term declines in groundwater storage volumes reduce the reliability of groundwater as a water supply for agricultural, municipal, domestic and industrial uses. In some basins with specific types of geology, declines in groundwater storage can be associated with subsidence, which may permanently reduce the storage capacity of the aquifer system.

How can we monitor groundwater storage to demonstrate the success of our plan?

Groundwater levels in various wells throughout a basin can be used in conjunction with computer models to estimate the overall groundwater storage in local aquifers. Since water levels can vary throughout an aquifer, it is important to monitor groundwater levels at multiple locations. The GSP will establish a monitoring network to assess the success of planned actions to stabilize groundwater storage.

30 YEAR HYPOTHETICAL GROUNDWATER STORAGE TRENDS



In California's highly variable climate, groundwater storage will fluctuate naturally. In sustainably managed basins, groundwater levels will have more opportunity to recover over time.

What might I be asked to do?

- Coordinate with my neighbors and my Groundwater Sustainability Agency (GSA) in developing a GSP that stabilizes and restores groundwater storage
- Adjust or reduce total pumping volumes
- Participate in or contribute to groundwater recharge programs or projects
- Allow or participate in monitoring endorsed by my GSA

Be involved in your local GSA

SGMA encourages local landowners to work together to develop effective GSPs, and encourages neighboring basins to find common, acceptable solutions. Basins not managed locally, that fail to take corrective action over time, may have plans written and implemented by the State Water Resources Control Board.

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