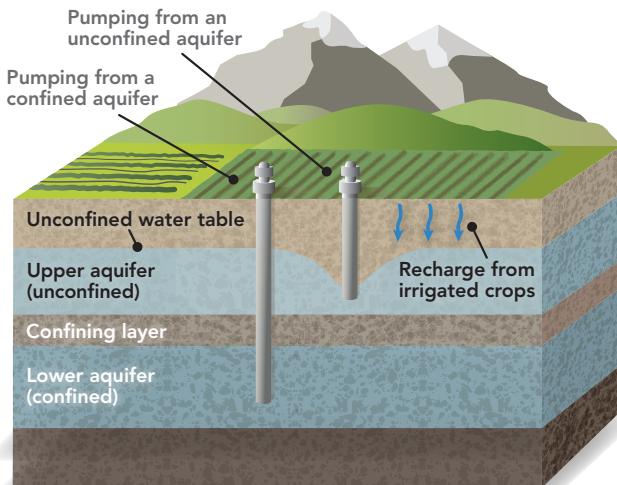


Lowering Groundwater Levels



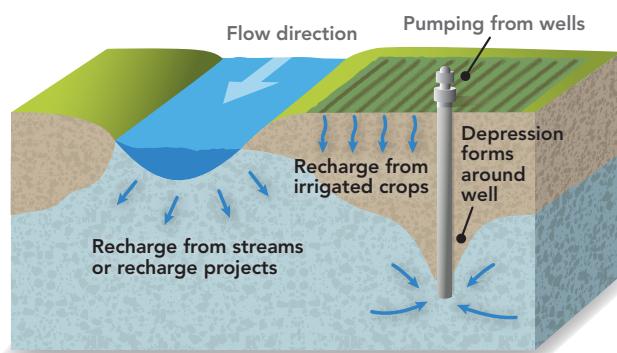
Multiple factors affect groundwater levels.

Groundwater levels in aquifers vary 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. Chronic lowering of groundwater levels can occur when the volume of groundwater pumped exceeds the volume of recharge, year over year. SGMA requires that Groundwater Sustainability Plans (GSPs) set forth actions to stabilize and/or improve groundwater levels.



Groundwater responds differently to pumping based on geology and climate factors.

Geology controls how groundwater levels vary naturally and how they will respond to groundwater pumping. Local geology results in two kinds of aquifers: unconfined aquifers and confined aquifers. Unconfined aquifers often extend from the land surface and receive recharge directly from the overlying land surface. Confined aquifers have impermeable rock or clay layers that limit recharge from directly above the aquifer.



Why can groundwater levels decrease?

Groundwater levels in confined and unconfined aquifers typically vary seasonally. Over longer periods, groundwater levels can vary in response to multi-year wet or dry conditions. This natural variability can be exacerbated by over-reliance on groundwater when surface water supplies are limited, unavailable, or highly variable, year-to-year. Some areas of California have seen groundwater declines for decades as a result of groundwater pumping.

Aquifers in areas with higher rainfall can receive substantial natural recharge during winter months that may offset groundwater pumping impacts, while aquifers in arid areas that receive little natural recharge are more susceptible to over-pumping.

Why do groundwater levels matter?

How does groundwater pumping affect groundwater levels?

How might this impact future groundwater pumping?

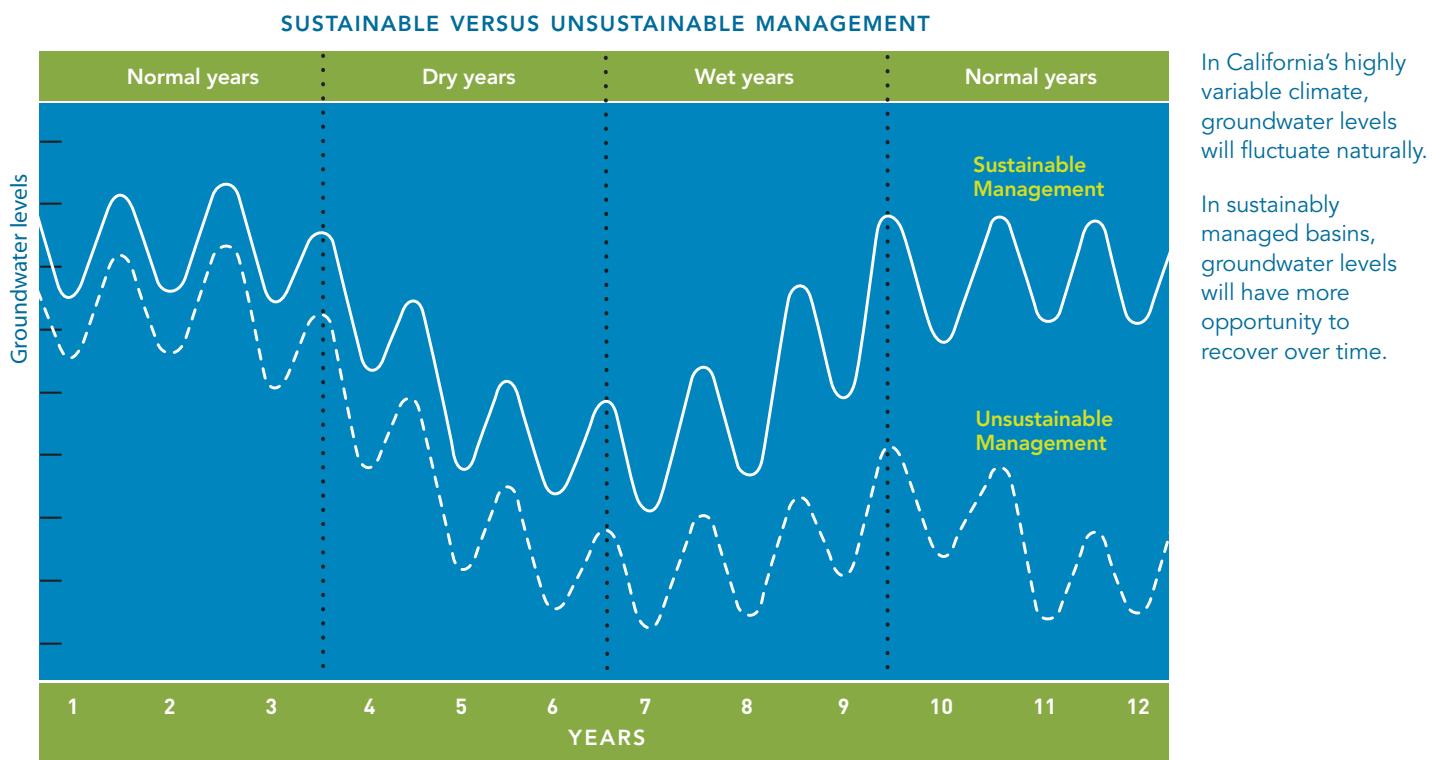
Will chronic lowering of groundwater levels affect me and my community?

In addition to decreasing the reliability of groundwater as a water supply at the basin scale, the chronic lowering of groundwater levels requires more energy to pump water. In some basins with specific types of geology, lowering groundwater levels can be associated with subsidence, which may permanently reduce the storage capacity of the aquifer system.

Lowering groundwater levels may require costly expenditures, like lowering a pump within a well casing, deepening an existing well, or even drilling a new well.

How can we monitor groundwater levels to demonstrate the success of our Groundwater Sustainability Plan?

The GSP may require modified operations of wells to minimize chronic lowering of groundwater levels. The GSP will establish a monitoring network to assess the success of such modifications by measuring groundwater levels at key locations within your groundwater basin.



What might I be asked to do?

- Coordinate with my neighbors in development of a GSP through participation in my Groundwater Sustainability Agency (GSA)
- Adjust or reduce total pumping volumes
- Participate in or contribute to groundwater recharge programs or projects

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.