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Management Act. This 2014 legislation was a response to the extreme land subsidence and water-quality issues resulting from a century of groundwater overuse in the San Joaquin/Tulare basin and other smaller basins in the state. Sustainable groundwater management under SGMA seeks to avoid "significant and unreasonable undesirable results." SGMA proposes that groundwater management is best accomplished at the local level, and Groundwater Sustainability Agencies (GSAs) around the state have been charged with drafting Groundwater Sustainability Plans (GSPs) to help meet this challenge.

The final GSPs were due in January of 2022, and the final plan for the Vina subbasin—one of the main groundwater sources for Chico and the northwestern portion of Butte County—was approved by a Vina GSA board made up of one representative each from five entities: Butte County Board of Supervisors, Chico City Council, Durham Irrigation District, agricultural well-user stakeholder, and domestic well-user stakeholder.

Representatives from the environmental community (including this author), domestic well owners, business associations, Cal Water, Butte College and Chico State were chosen to participate in the Stakeholders Advisory Committee (SHAC) alongside numerous agricultural pumpers.

The submitted GSP has drawn criticism from several members of the advisory committee who are concerned that the potential increased pumping of the aquifer allowed in the final plan could cause more domestic wells to go dry, lead to depleted streamflow, and desiccate both urban forests and oak wooodlands.

Honor the carrying capacity of resources

Century-long mega-droughts during the

Medieval period (especially between 900 and 1350 CE) forced the native peoples of the Southwest to abandon their civilization. But the people living in the great Central Valley were able to endure these dry periods. Robust aquifer systems provided the buffer needed for oak woodlands to persist and for streams to connect with rivers for anadromous fish like salmon to complete their life cycle. The Tulare Lake region has been continually inhabited for more than 10,000 years. The lake, the rivers, and the groundwater supported perhaps the largest population of Native Americans north of Mexico.

Even during the paleo mega-droughts the Sacramento Valley of Northern California maintained a rich, diverse environment that supported some of the densest populations of non-agricultural people in the world. Groundwater migrates slowly downstream and modest amounts of precipitation allowed the basin aquifers to remain in balance with the ecosystems like oak woodlands and salmon spawning/rearing streams to remain intact.

Paleosalinity records that reveal salinity conditions in the western Delta as far back as 2,500 years ago indicate that the last 100 years are among the most saline of periods in the past 2,500 years. One hypothesis is that depleted groundwater conditions allow salt water to intrude into the Delta.

Great Valley aquifers have buffered the impacts of the mega-droughts. If the Tuscan is drawn down during dry periods to meet regional and state-wide demand, we risk the destruction of that protection. Domestic wells will go dry. Streams will leak away. Valley Oak groves will be eliminated. The Chico urban forest will wither.

True sustainability identifies and honors the carrying capacity of resources.

Groundwater pumped into a North Valley rice field.
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