

The background of the slide is a light blue gradient. It is decorated with several realistic water droplets of various sizes, some with highlights and shadows, giving them a 3D appearance. The droplets are scattered across the slide, with a higher concentration in the top left and bottom right corners.

Santa Margarita Groundwater Basin and Sustainable Groundwater Management

February 9, 2019

John Ricker, Water Resources Division Director

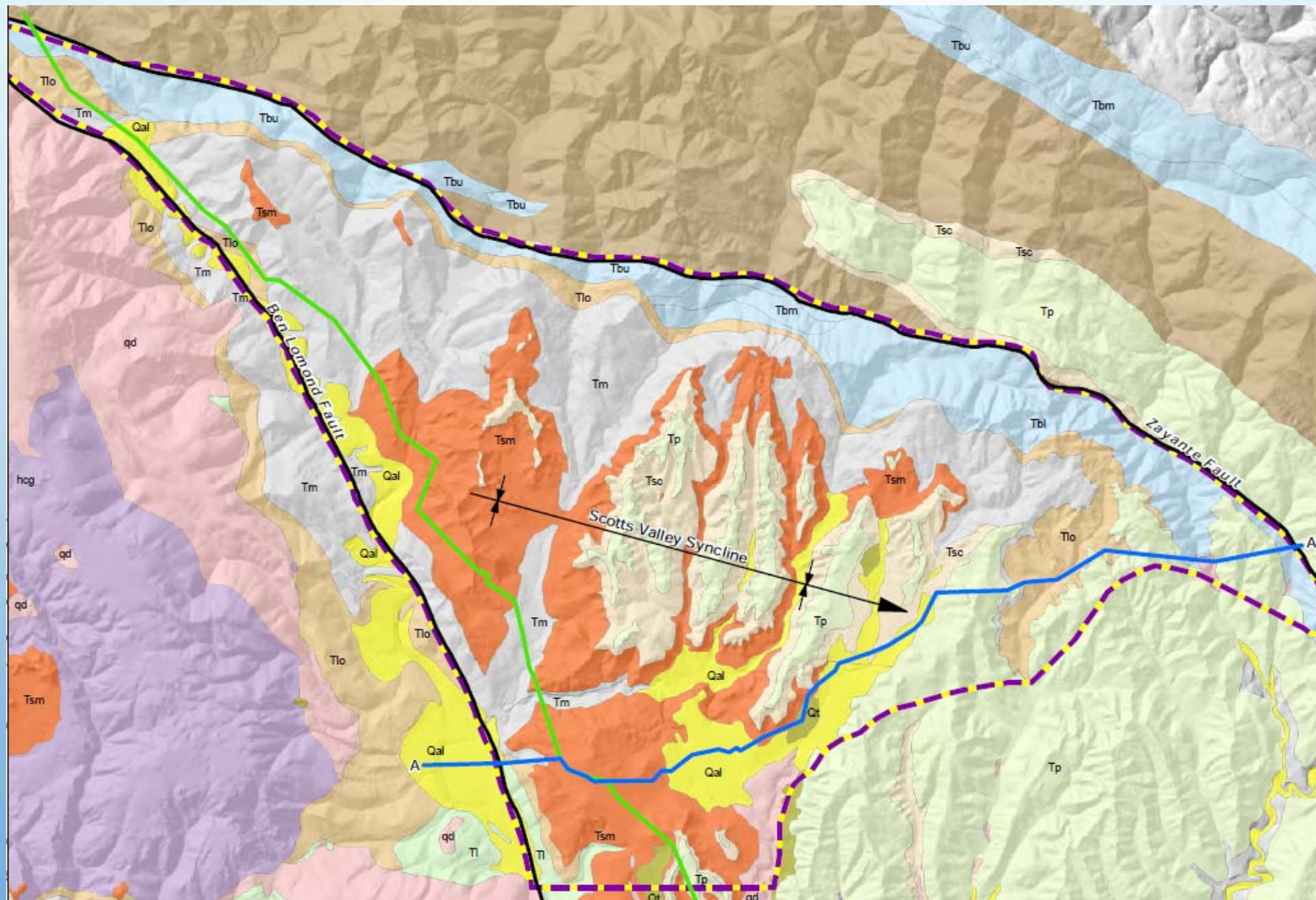
County of Santa Cruz

Topics

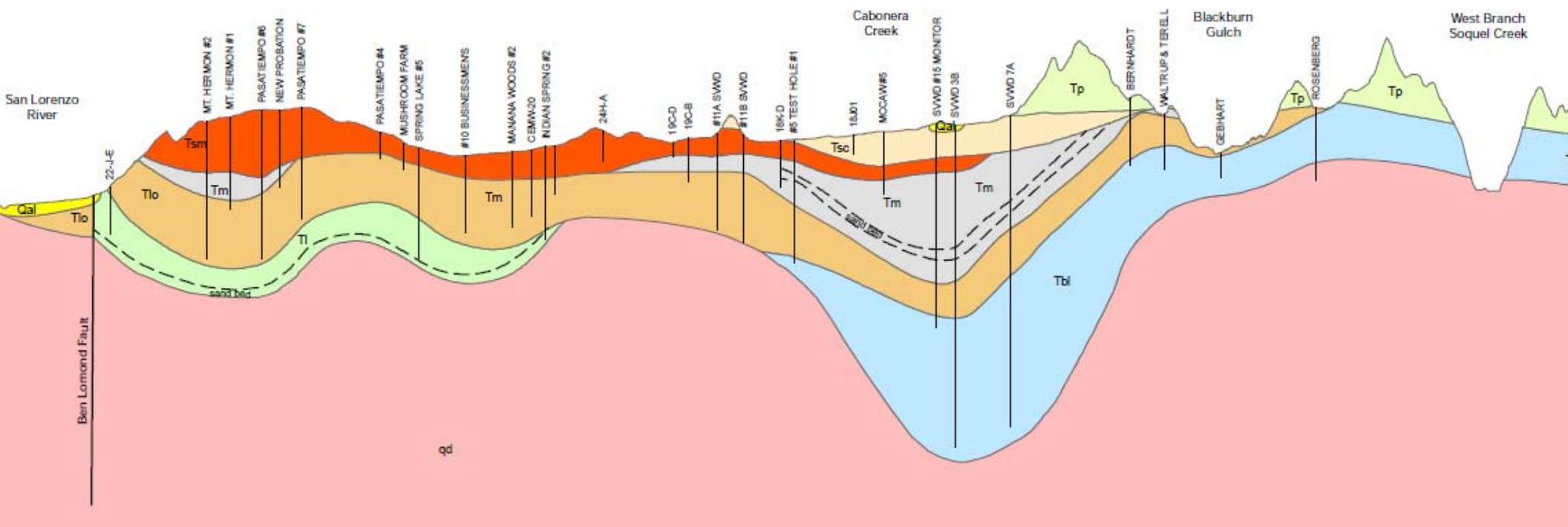
- Overview of Santa Margarita Groundwater Basin
 - Basin Users and Stakeholders
 - Management History
- Sustainable Groundwater Management Act (SGMA)
 - Agency Formation
 - Sustainability Indicators
 - Groundwater Sustainability Plan
 - Basin Setting, Water Budget



GEOLOGY



GEOLOGY WEST TO EAST



SANTA MARGARITA GROUNDWATER BASIN (SMGWB)

- Major water purveyors are Scotts Valley Water District (SVWD), San Lorenzo Valley Water District (SLVWD) And Mount Hermon Association (MHA)
- Basin provides 40-50% of low flow in San Lorenzo River
- Decline of groundwater levels in many parts of the basin during 1985-2004
- Estimated total loss of 28,000 acre feet in groundwater storage
- Pumping has decreased 45 percent since 1997
- Since 2005 the demand and supply in the basin have been in balance
- Future impact of climate change: 30% reduced recharge, increased demands

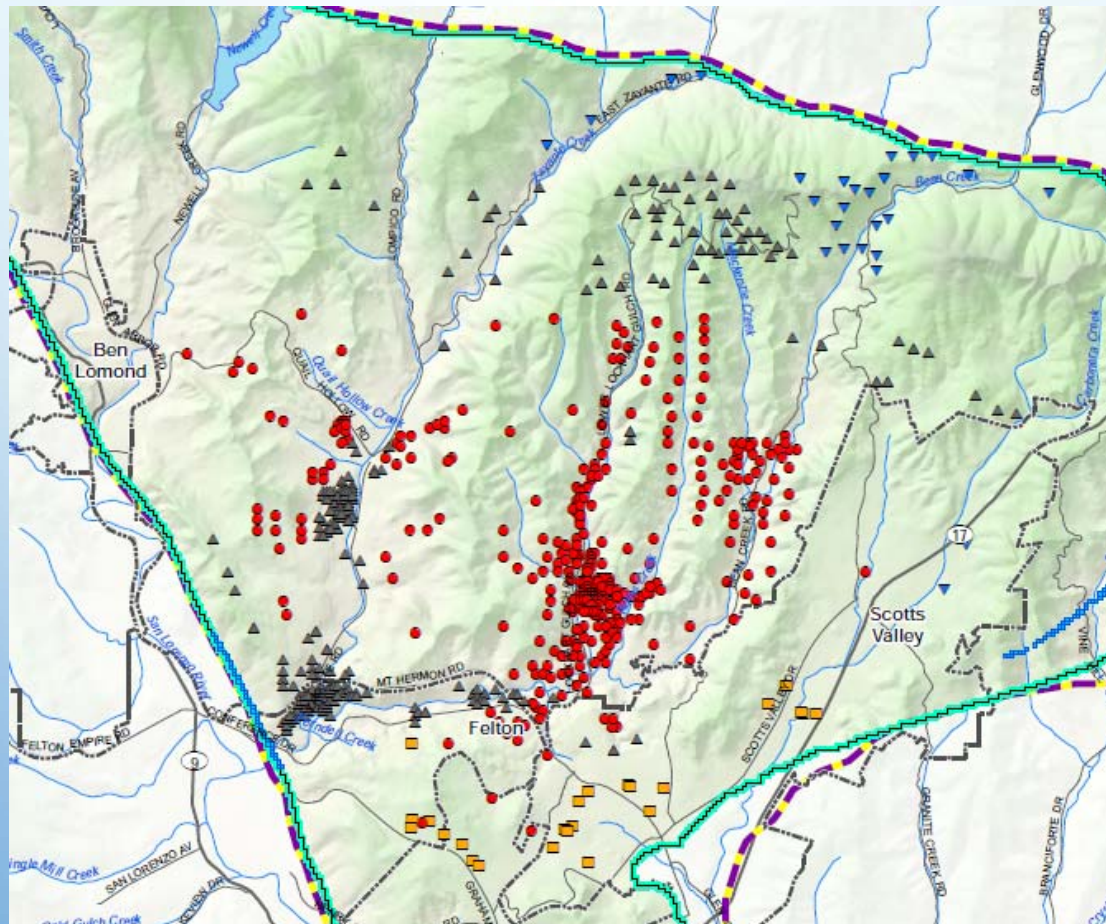
WATER USE

	Connections using Groundwater	2013-17 Average Use Acre-feet/yr	
Scotts Valley Water District	3,728	1,258	43%
San Lorenzo Valley Water District	3,248	1,044	36%
Mount Hermon Association	499	146	5%
Small Water Systems (13)	410	84	3%
Commercial, Industrial, Institutional, Ag. Users	~30	~170	6%
Individual Well Users	~1100	~220	8%
Total Pumpage*	7,885	2,922	
Streamflow Discharge: Fish and the City of Santa Cruz		~6,000	
City of Santa Cruz	~5800	~2,500	
* Estimated 850 af/y return flow			

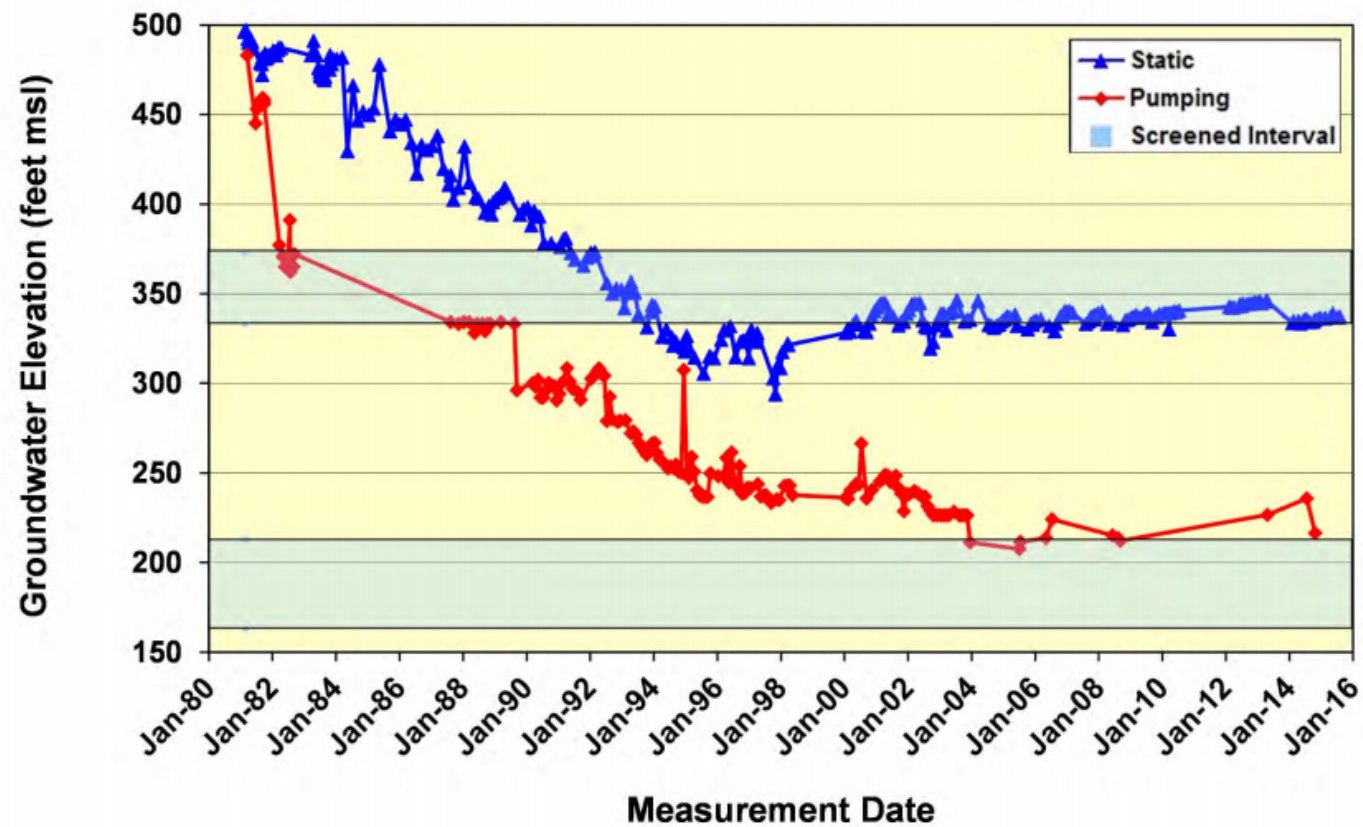
MANAGEMENT HISTORY

- ▶ Active groundwater management in the basin has occurred since early 1980s
- ▶ In response to local request, Basin designated by USEPA as Sole Source Aquifer
- ▶ 1983 - SVWD instituted a Water Resources Management Plan to monitor and manage water resources
- ▶ 1994 - SVWD formally adopted a Groundwater Management Plan in accordance with AB3030, also known as the Groundwater Management Act (Water Code Sec. 10750)
- ▶ 1995 - SVWD, SLVWD, MHA, Lompico County Water District, City of Scotts Valley and County of Santa Cruz signed a MOU forming Santa Margarita Groundwater Basin Advisory Committee (SMGBAC)
- ▶ 2017 - Formation of Santa Margarita Groundwater Agency

WELLS IN DIFFERENT AQUIFERS: SANTA MARGARITA, MONTEREY, LOMPICO, BUTANO



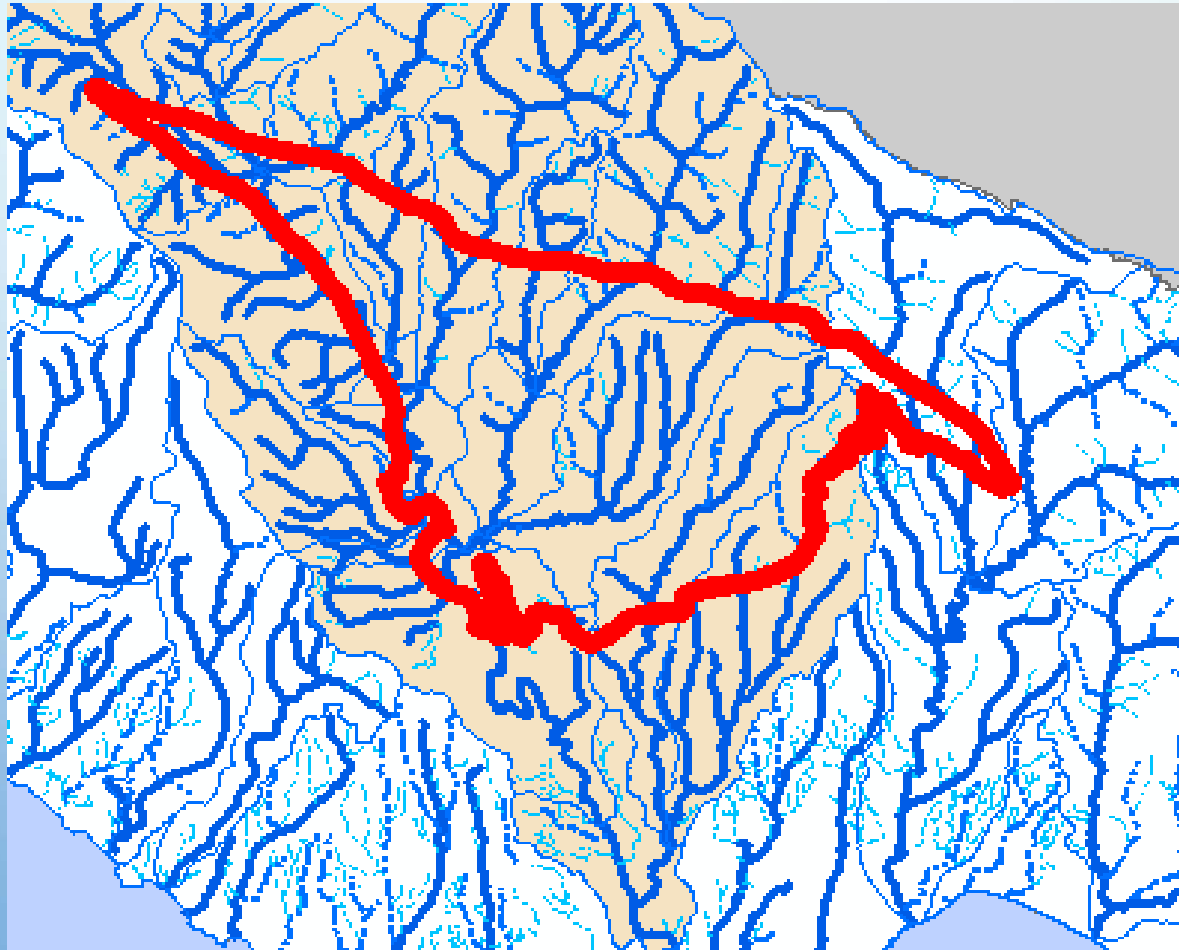
SVWD Well #9 - Comparison of Water Levels and Screened Interval



CONTRIBUTION TO STREAMFLOW



SANTA MARGARITA BASIN IN SAN LORENZO WATERSHED



SANTA MARGARITA BASIN CONTRIBUTION TO STREAMFLOW

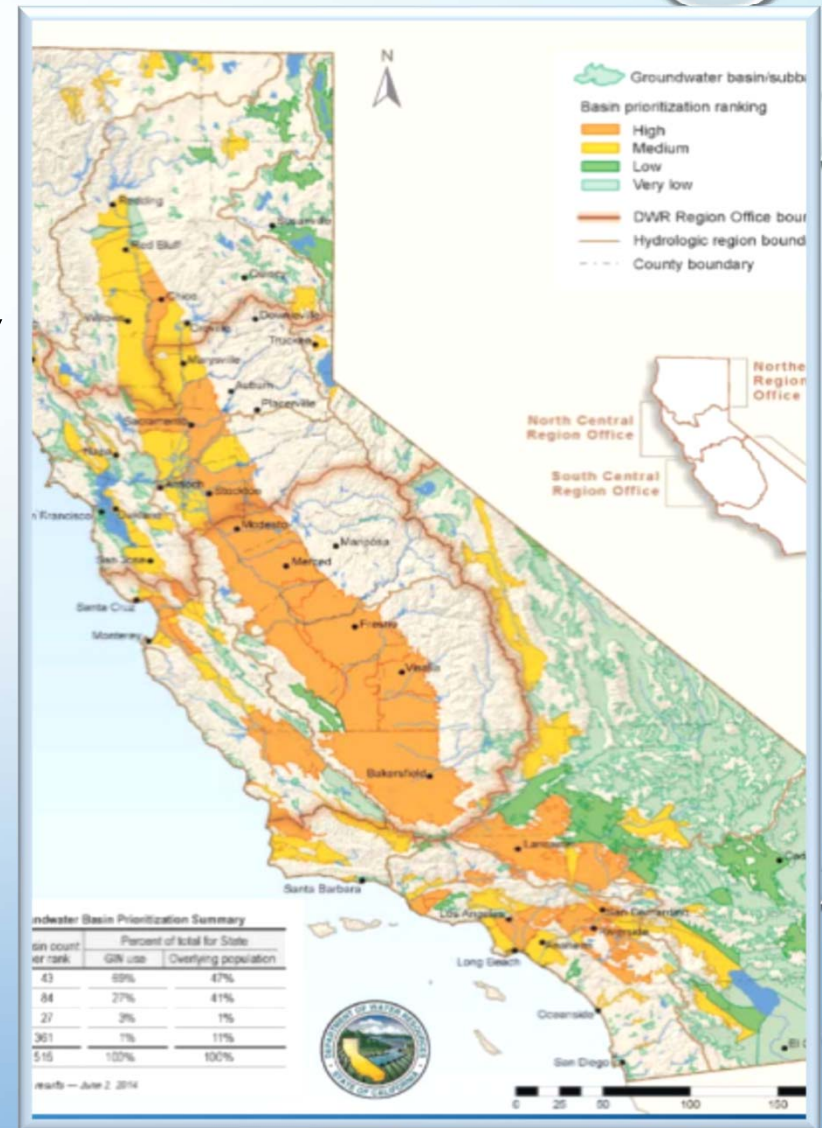
- Love Creek, Newell Creek
- Lompico Creek, Zayante Creek, Bean Creek
- Carbonera Creek, Branciforte Creek
- San Lorenzo River – 40-50% of Dry Season Flow
- Groundwater Declines of up to 250 ft. have reduced flow by 0.2-0.5 cfs.
10-20% in Lower Bean Creek
- There has been a cumulative estimated loss of storage of 28,000 af.
(9 years of pumping)
- Basin has stabilized at lower than historical levels

SUSTAINABLE GROUNDWATER MANAGEMENT ACT OF 2014 (SGMA)

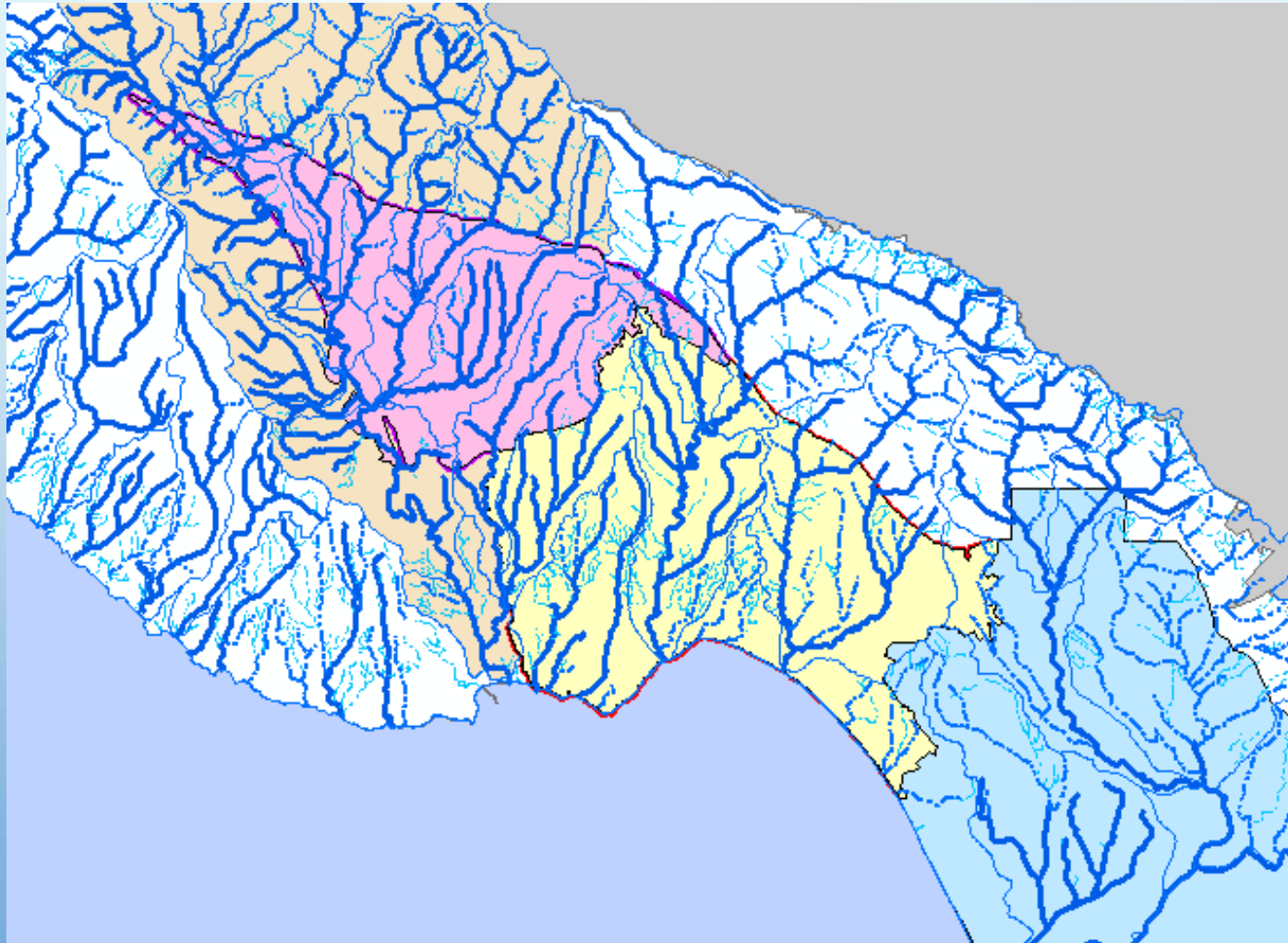
- Provides local agencies and authority.
- We define sustainability and determine how we will achieve it.
- The State will limit usage and charge fees if we do not succeed.
- Form Groundwater Sustainability Agency (GSA): 2017
- Develop Groundwater Sustainability Plan (GSP): 2022
- Achieve Sustainability by 2042
- Authority and requirement to monitor, regulate water usage and/or develop supplemental supply
- Water users pay share of cost of achieving sustainability, proportional to impact and benefit, pursuant to Prop 26, 218

SGMA BASINS

- 127 basins in the state, high and medium priority
- Designation and priority is based on water use, not misuse
- Santa Margarita Basin is not designated as in a state of critical overdraft.



SANTA CRUZ COUNTY GROUNDWATER BASINS





SANTA MARGARITA GROUNDWATER AGENCY(SMGWA) JOINT POWERS AUTHORITY AND BOARD

- San Lorenzo Valley Water District (JPA And 2 Board Seats)
- Scotts Valley Water District (JPA And 2 Board Seats)
- County Of Santa Cruz (JPA And 2 Board Seats)

- Private Well Owner/Small Water System Representatives (2 Board Seats)
- City Of Scotts Valley (1 Board Seat)
- Mount Hermon Association (1 Board Seat)
- City Of Santa Cruz (1 Board Seat)

GSP CONTENTS

(To be developed with 50% state grant funding)

- Administrative information
- Basin setting
- Sustainable management criteria
- Monitoring networks
- Projects and management actions

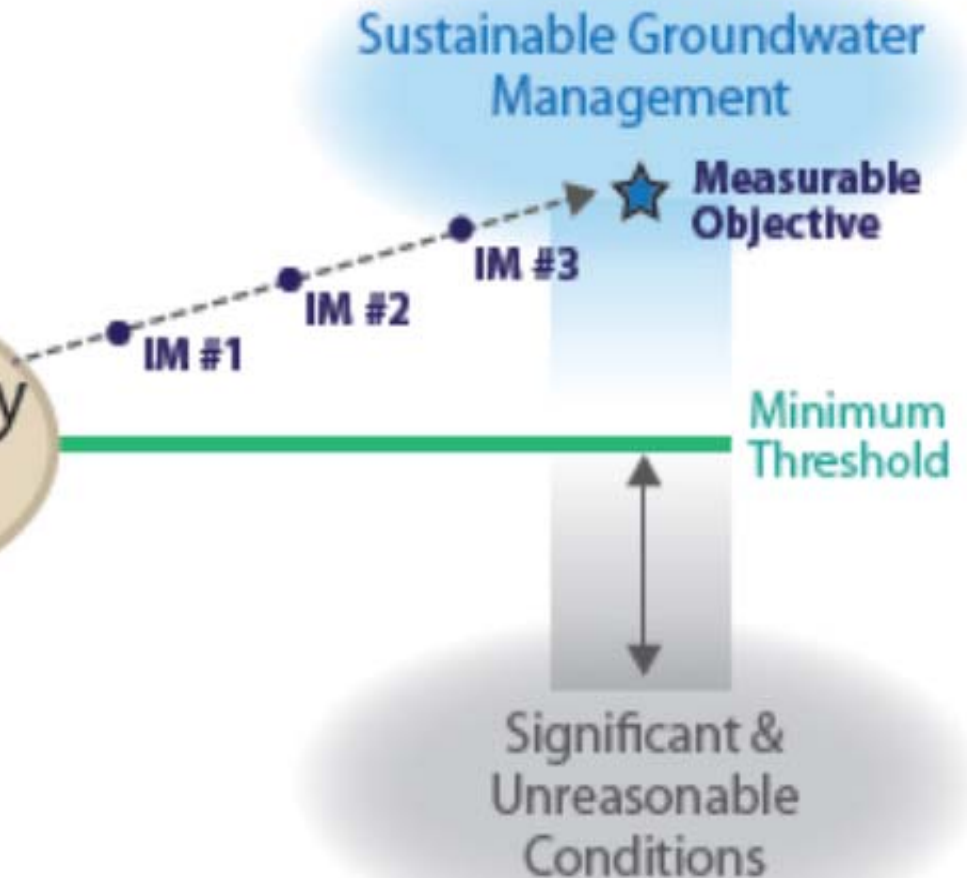
DEFINITION OF SUSTAINABILITY

- State mandate to avoid any further undesirable results, or worsening of conditions that existed January 2015.
- Locally we define and set our objectives:
 - Reduction in groundwater storage
 - ~~Seawater intrusion~~
 - Degraded water quality
 - ~~Land subsidence~~
 - Chronic groundwater overdraft
 - Surface water depletions impacts on human & ecological uses

MEASURES OF SUSTAINABILITY

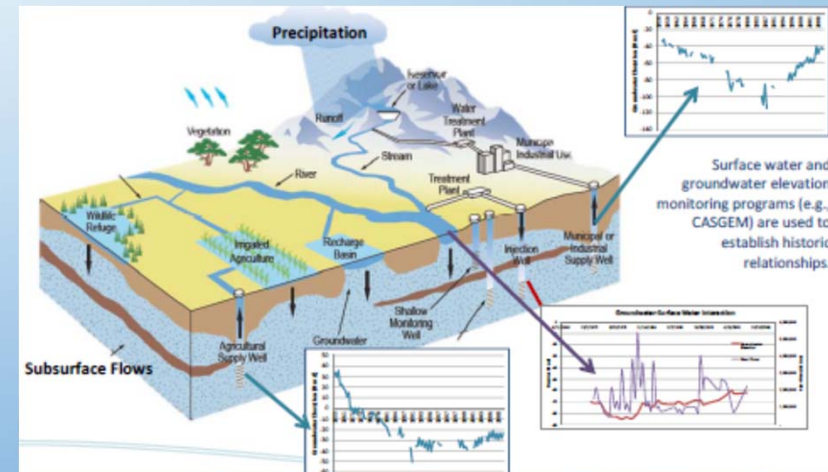
- Groundwater Levels
- Groundwater Storage
- Seawater Intrusion
- Water Quality
- Land Subsidence
- Interconnected Surface Water

Sustainability
Indicator



BASIN SETTING

- Static physical characteristics (ie geology)
- Dynamic groundwater conditions based on groundwater modeling
 - Includes analysis of groundwater-surface water interactions
 - Analyses how the basin responds to stresses over time
- Water budget – quantitative accounting of inflows and outflows based on modeling and water use projections
- Quantification of overdraft conditions
- Helps to understand the future projected conditions needed to develop management actions and projects



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QUESTIONS AND DISCUSSION