SANTA MARGARITA
Groundwater Agency

Surface Water / Groundwater Interactions Under SGMA

February 9, 2019

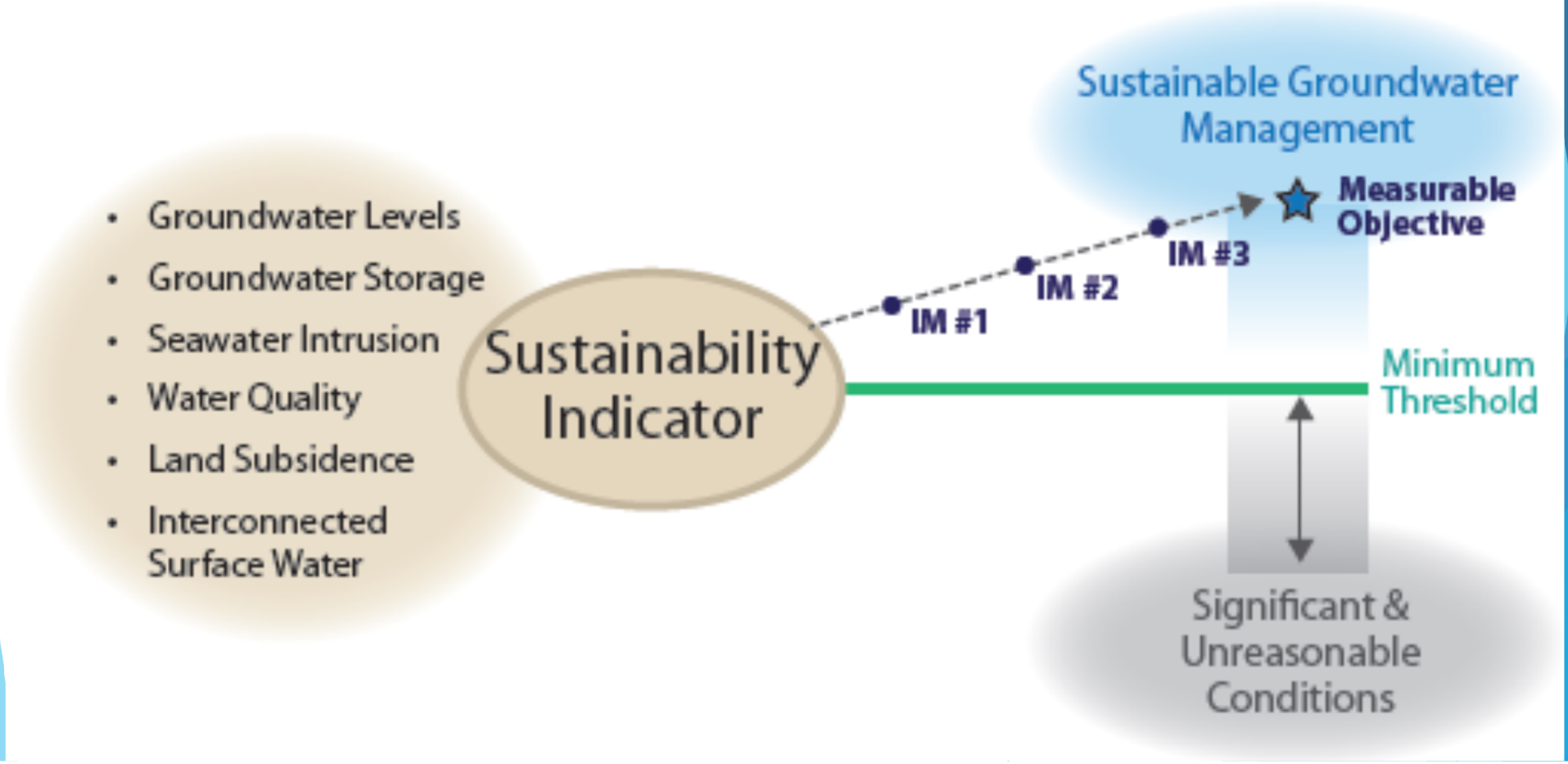
The Purpose of Groundwater Management

Unmitigated groundwater pumping Statewide has lead to numerous economic and environmental problems

State mandate to avoid any further undesirable results:

- Reduction In Groundwater Storage
- Seawater Intrusion
- Degraded Water Quality
- Land Subsidence
- Chronic Groundwater Overdraft
- Interconnected Surface Water

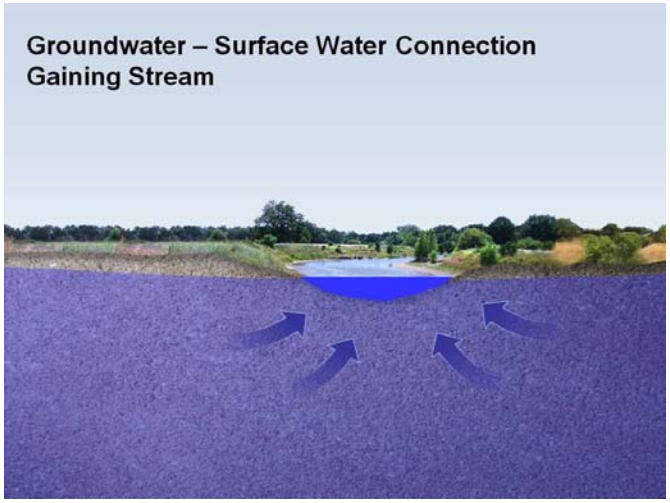
Sustainable Management Criteria

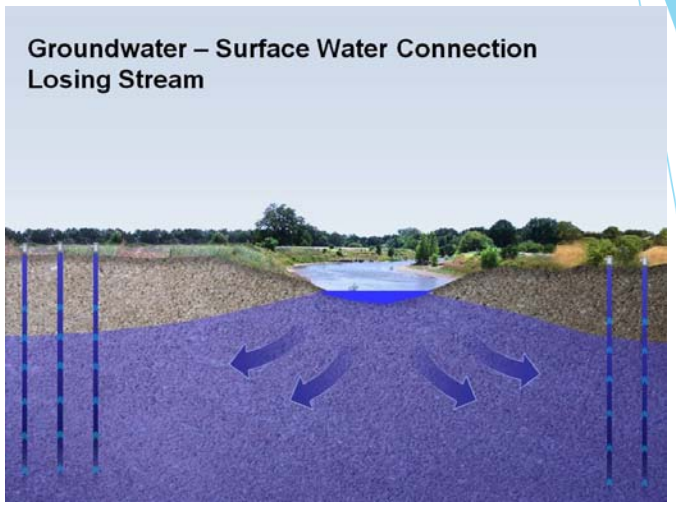


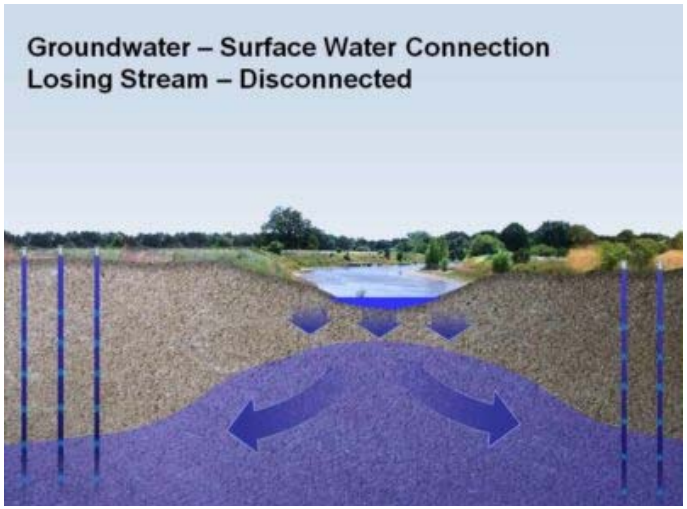
Considerations under SGMA for Undesirable Result #6

- Must consider the needs of all surface water users
- Must determine if the depletion of surface water is causing a **significant and unreasonable impact**
- Conditions cannot get worse than they were on January 1, 2015
  - That was in the middle of a drought
  - No requirement to recover/ improve conditions
- Widely considered the most complicated indicator

Pumping wells can draw down the aquifer, impacting surface water







Images from Maven's Notebook, originally used by Maurice Hall

What influences Stream Flow?

- Rainfall/Runoff from Watershed
  - Landuse/imperviable pavement
  - Watershed size
- Surface Water Extractions
- Surface Water Management
  - Bypass flows
  - Releases from Reservoirs
- Evapotranspiration
- Interflow From Previous Rain Years
- Subsurface Geology
- Groundwater Extraction/Levels

What can the GSA manage?

- Rainfall/Runoff from Watershed
  - Landuse/imperviable pavement
  - Watershed Size
- Surface Water Extractions
- Surface Water Management
  - Bypass flows
  - Releases from Reservoirs
- Evapotranspiration
- Interflow From Previous Rain Years
- Subsurface Geology
- Groundwater Extraction/Levels

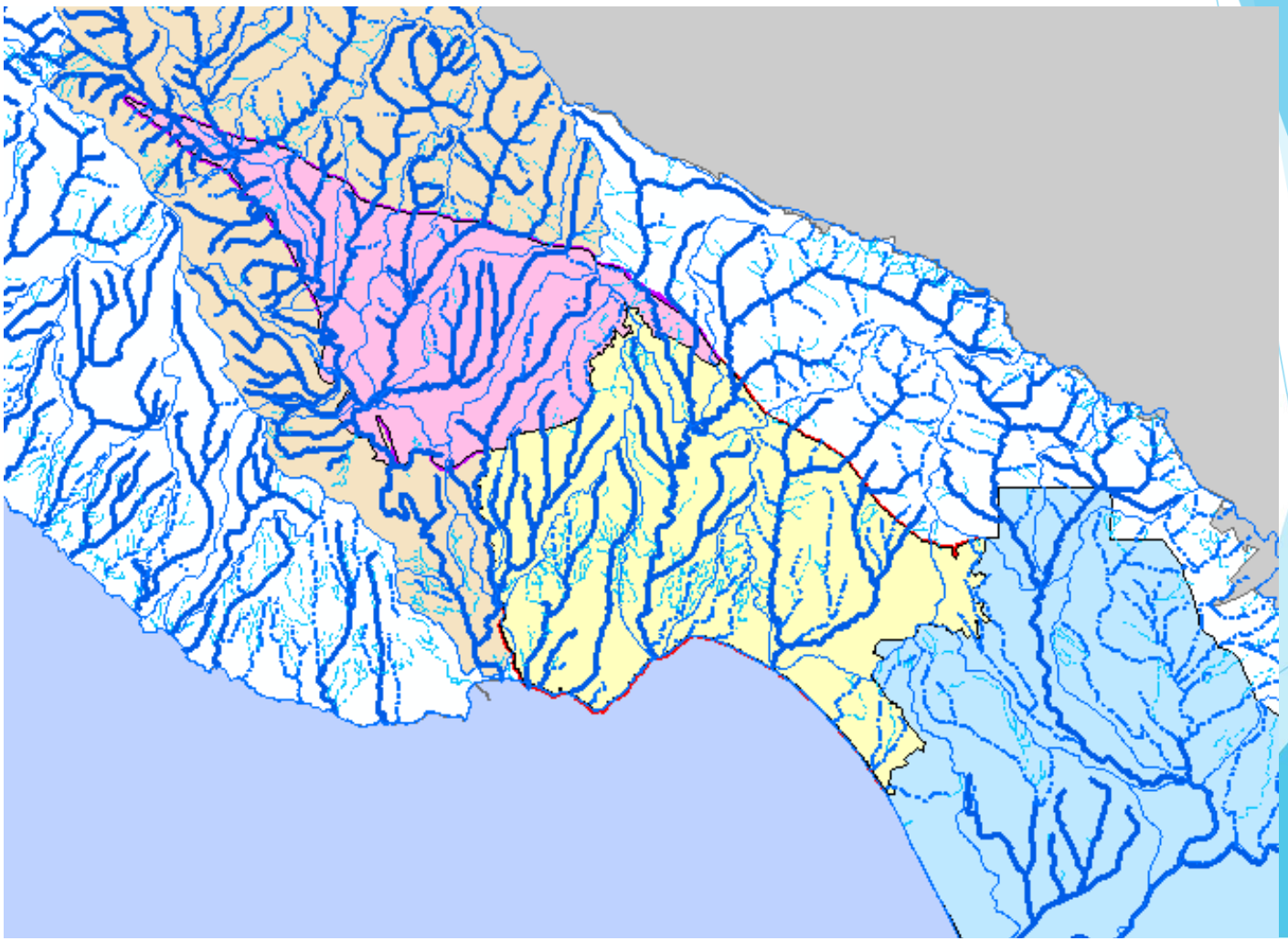
Groundwater Level Proxy

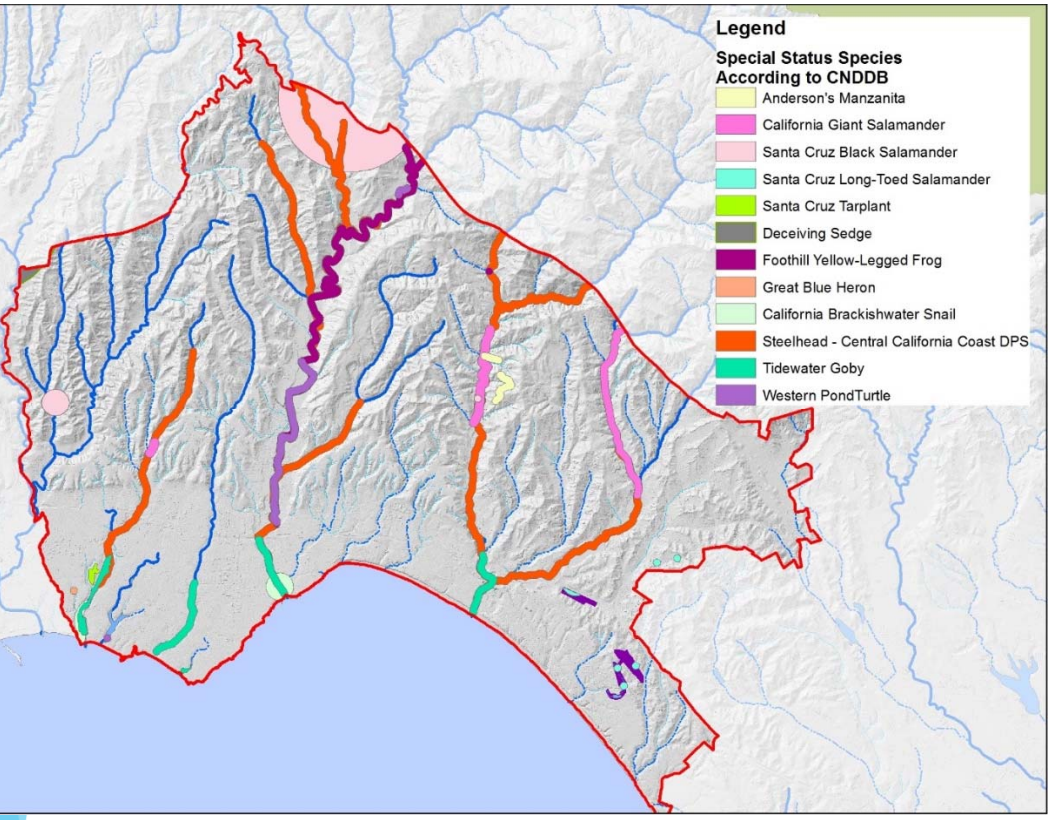
- Groundwater model simulates rates or volumes
  - Runoff
  - Interflow
  - **Groundwater**
- Preferable to use groundwater levels to manage surface water depletion if there is a direct relationship with depletion rate

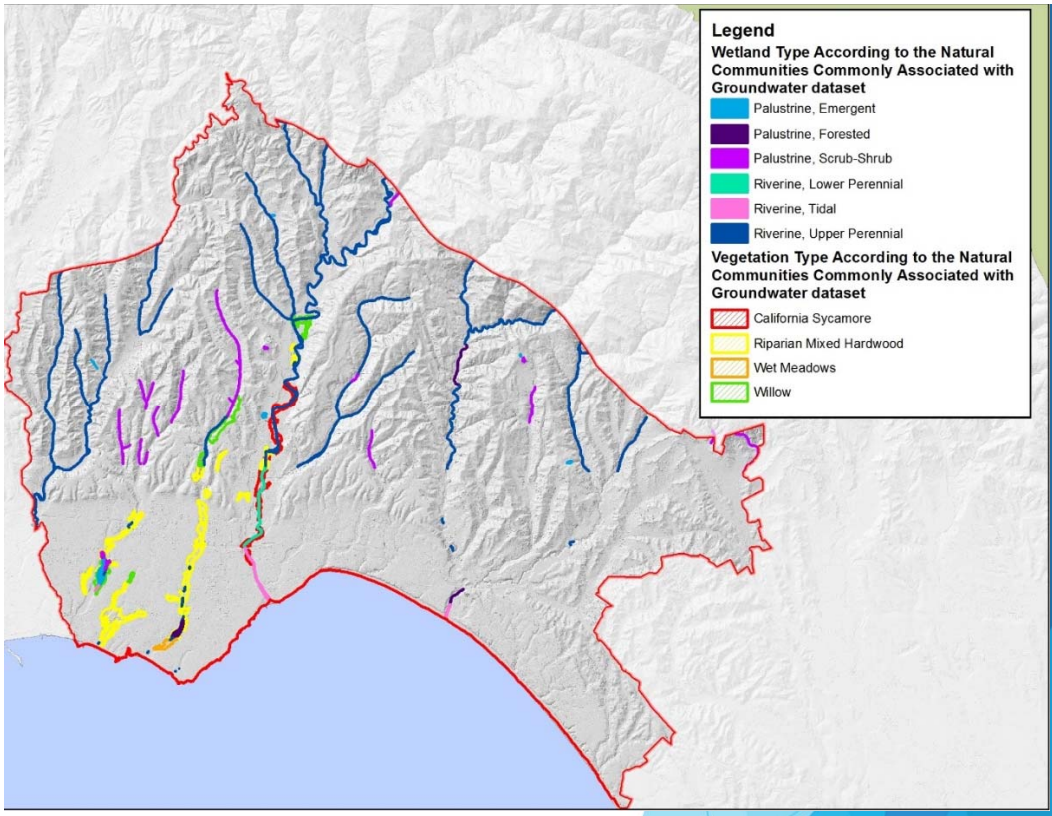
- Develop the Plan to maintain or increase groundwater levels near interconnected streams

Approach for the Mid-County Groundwater Agency

Santa Cruz County Groundwater Basins





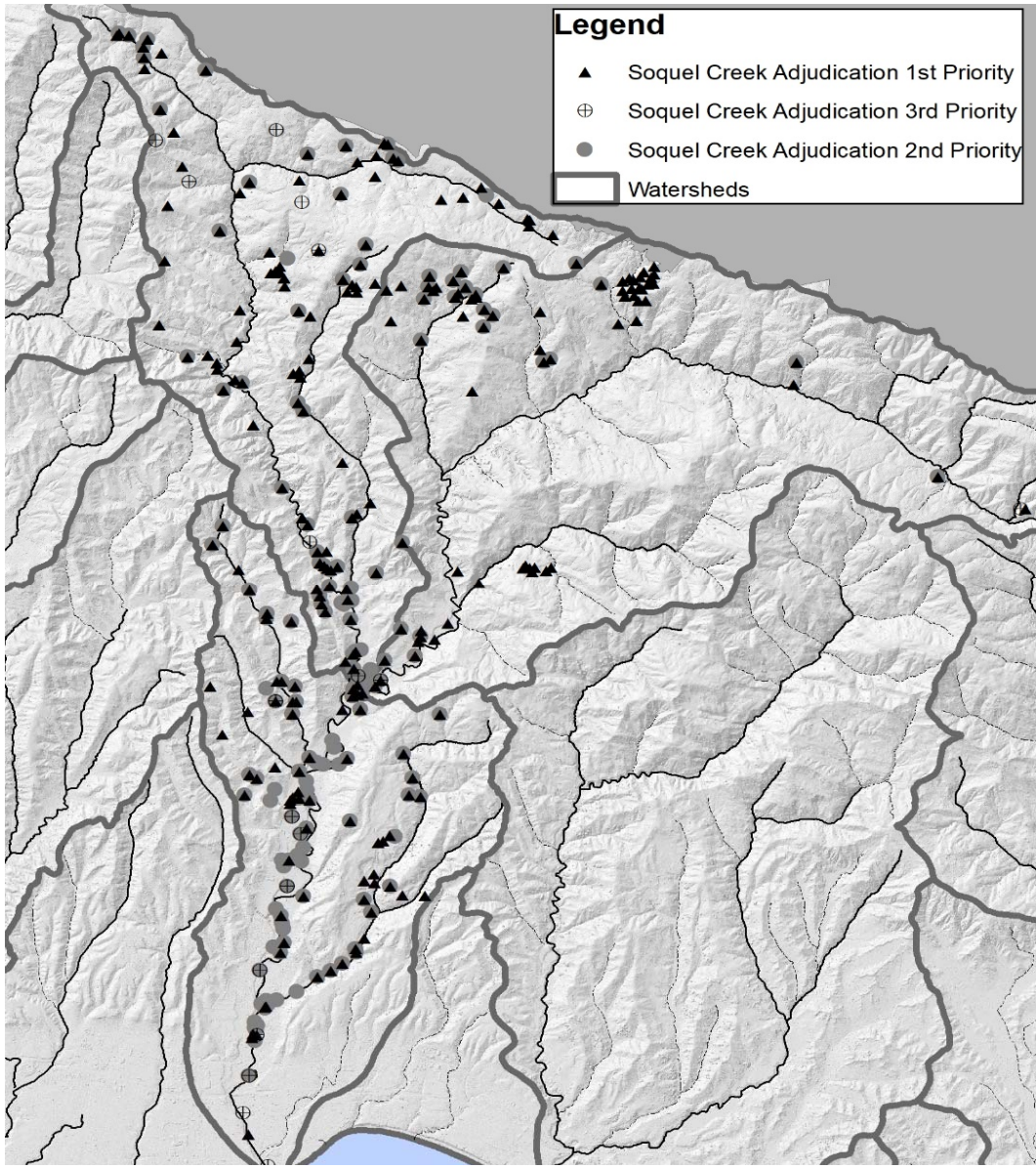


Identifying all users of surface water - Environmental

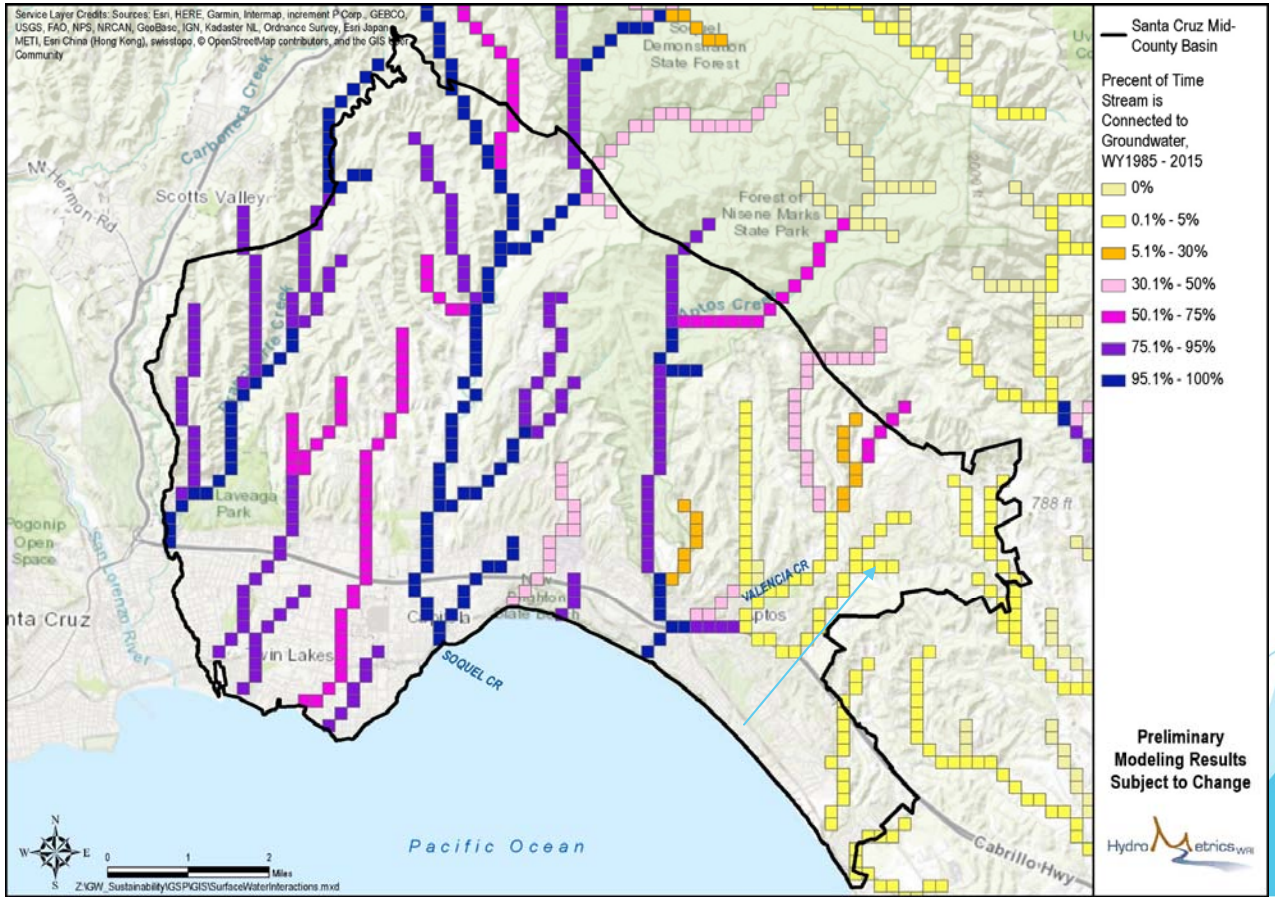
Environmental Users Cont.

Species common name	Priority for GDE management	Removed – needs covered by priority species (*), or not impacted by groundwater management	Further input required
Steelhead	X		
Coho Salmon	X		
Riparian forest including willow and sycamore	X		
California Brackishwater Snail			X
Tidewater Goby			X
Wet Meadows			X
Lamprey		X*	
Santa Cruz Long-Toed Salamander		X	
Santa Cruz Black Salamander		X	
Foothill Yellow-Legged Frog		X*	
California Red-Legged Frog		X*	
Western Pond Turtle		X*	
Anderson's Manzanita		X	
Santa Cruz tarplant		X	
Deceiving sedge/Santa Cruz Sedge		X	

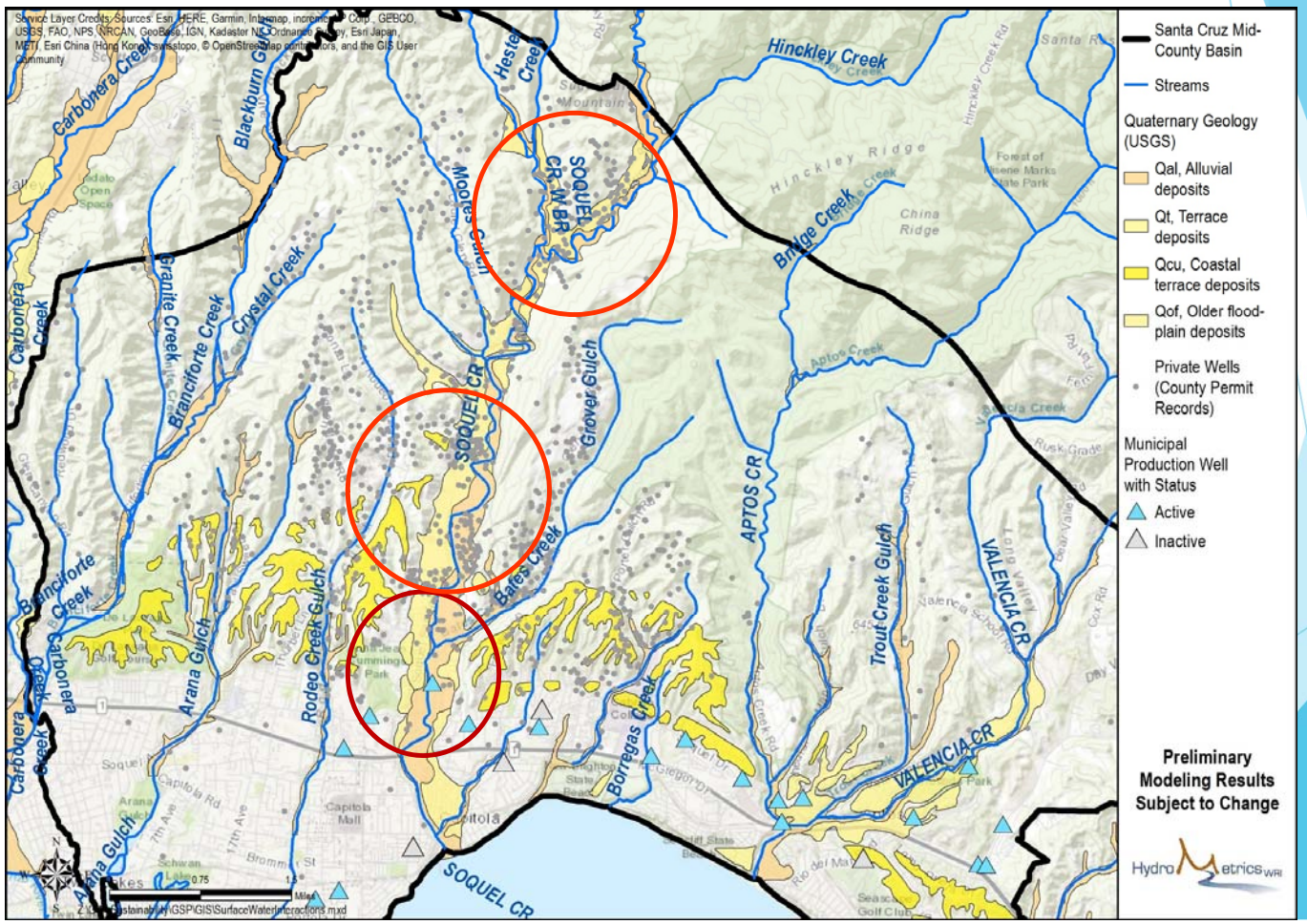
Identifying all users of surface water - Human



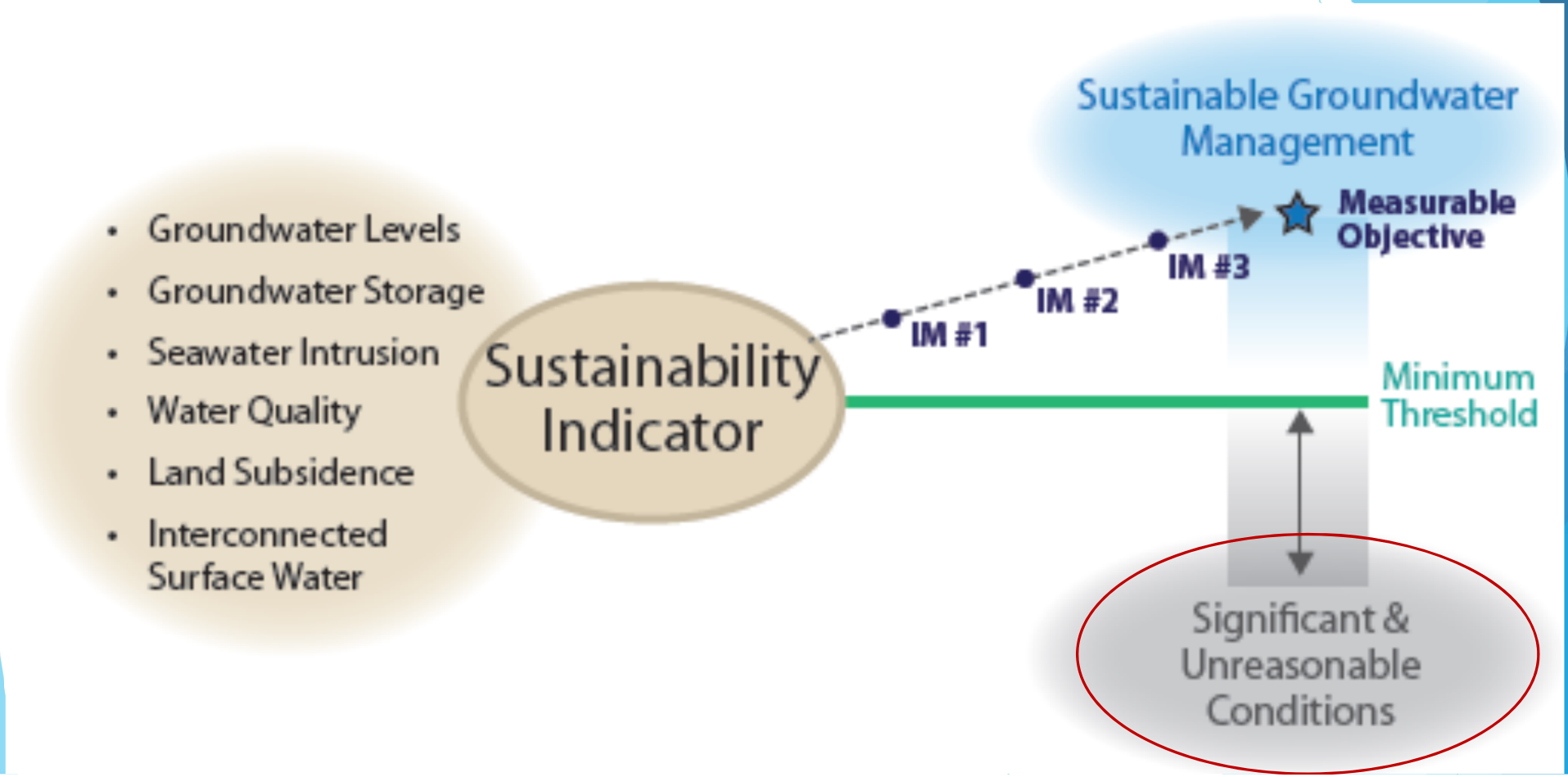
Where is Surface Water Connected to Groundwater?



Locating Pumping Centers



Sustainable Management Criteria



Draft Statement on Significant and Unreasonable

- Lowering of groundwater levels adjacent to interconnected streams supporting special status species, due to groundwater extraction, that results in a significant decrease in stream baseflow during the period from June -October would be a significant and unreasonable condition

Next Steps

- Determine our objective
- Determine our minimum threshold
- Decide on monitoring
  - Likely to include shallow monitoring wells adjacent to streams
  - Additional stream gauging

Interconnected Surface Water in the Santa Margarita Basin

Complying with SGMA and Beyond

Comparing the Basins

- Both basins
  - have surface waters that support special status species
  - see groundwater extraction from municipal and private wells
- Far more surface water extraction in SMGWA
- Far less agricultural and commercial water use
- Mid-County is facing seawater intrusion
- Approach will likely follow the process of Mid-County, but still be site specific

Additional Takeaways

- The GSP is exempt from CEQA
  - Cannot ignore the ESA or Public Trust Doctrine
- The SMGWA does not just want to do the minimum under SGMA:
  - Beyond minimum sustainability thresholds and objectives described in the GSP, the **SMGWA will examine possibilities to recover/restore the Basin's aquifers and restore tributary base flows to the best extent possible.**
- SGMA helps coordinate a regional approach to water
- Recovering groundwater levels will benefit the basin and interconnected streams will see improvement

And Finally….

- If this topic is important to you, please come to the SMGWA meetings.