WSA <-> SGMA

Ward van Proosdij - BCGWA

Outline

- Introduction
- Basics of SGMA
- Main implications
- Lessons (to be) learned

California, some basics

	BC	California
Area (square km)	944,735	423,970
Water (%)	2.1	4.7
Population (million)	4.6	39.5
Highest point (m)	4,663	4,421
Lowest point (m)	-2	-85

California State groundwater rights

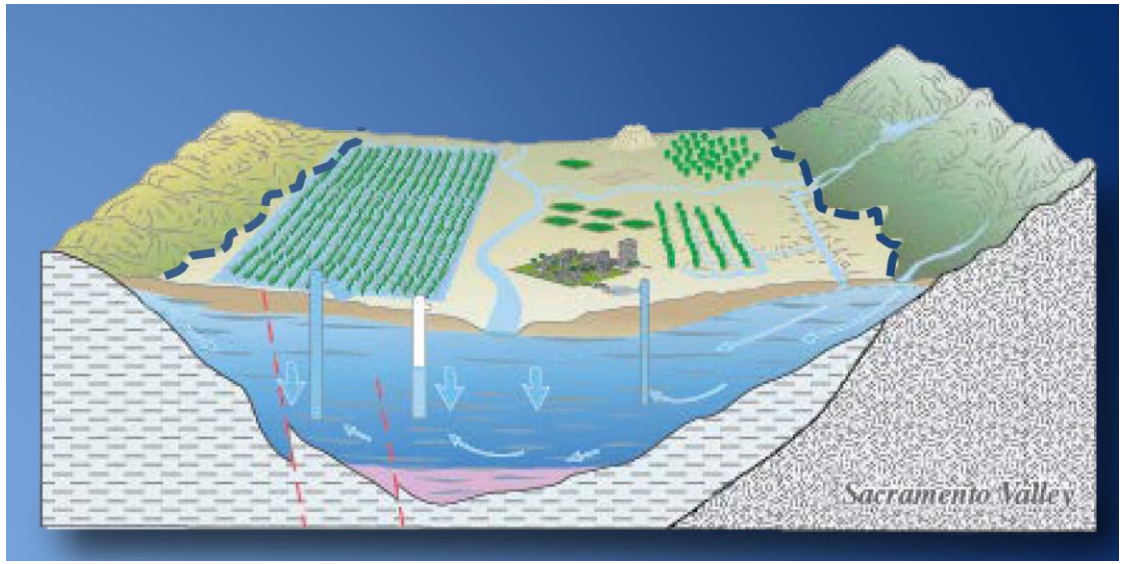
- A water right is a legal entitlement authorizing water to be diverted from a specified source and put to beneficial, nonwasteful use.
- The 'Rule of Capture' provides each landowner the ability to capture as much groundwater as they can put to a beneficial use.
- Landowners are not guaranteed any set amount of water.
- Well-owners are not liable to other landowners for damaging their wells or taking water from beneath their land.

Sustainable Groundwater Management Act (SGMA)

- As in BC groundwater in California was not regulated.
- On September 16, 2014, Governor Jerry Brown of California signed into law a three-bill legislative package, composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley), collectively known as the Sustainable Groundwater Management Act (SGMA).
- Now California has a framework for Sustainable, Groundwater Management -> "Management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results."

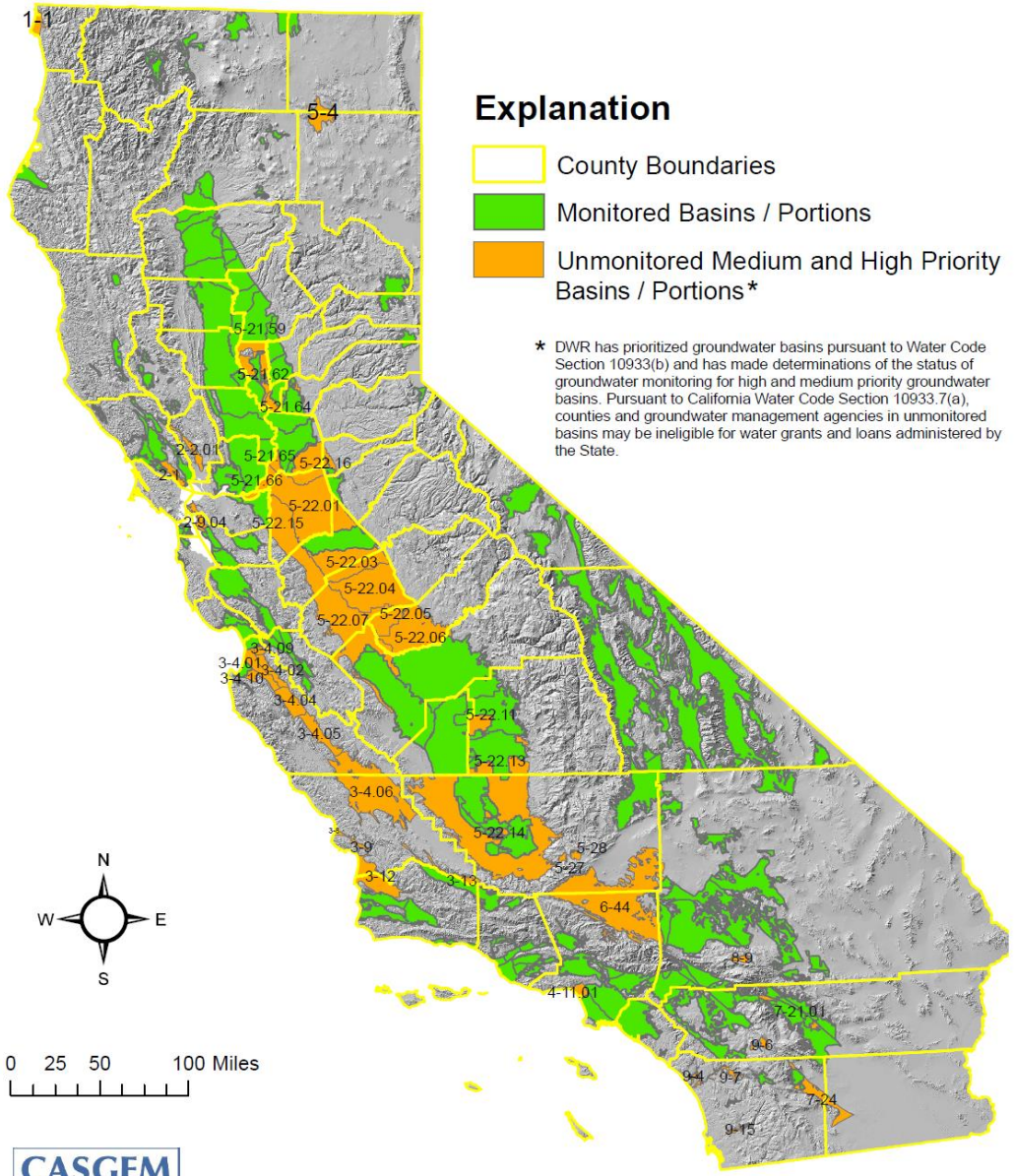
Defining Groundwater Basins

- A Groundwater Basin is an alluvial aquifer or stacked series of alluvial aquifers with reasonably well defined boundaries in a lateral direction and having a definable bottom.



- DWR requires a halt to overdraft and bring groundwater basins into balanced levels of pumping and recharge.
- Under SGMA, reach sustainability within 20 years of implementing sustainability plans. For critically over-drafted basins, that will be 2040. For the remaining high and medium priority basins, 2042 is the deadline.

Monitored and un-monitored basins



CASGEM
CALIFORNIA STATEWIDE GROUNDWATER ELEVATION MONITORING

References:

CASGEM Online System -
http://www.water.ca.gov/groundwater/casgem/

CASGEM Basin Prioritization -
http://www.water.ca.gov/groundwater/casgem/basin_prioritization.cfm

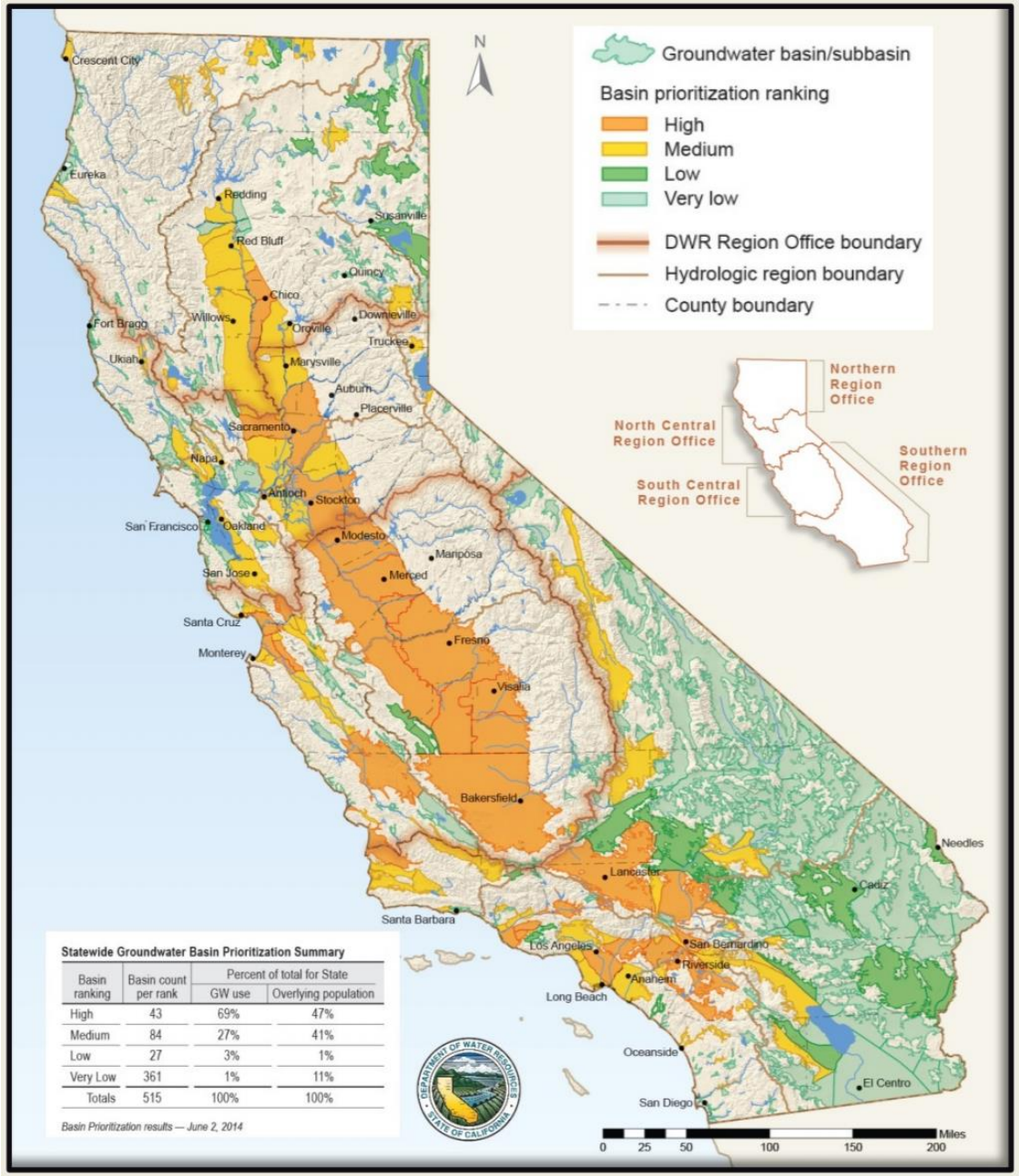
Data current as of July 23, 2014.
Data subject to change without notice.

DEPARTMENT OF WATER RESOURCES • STATE OF CALIFORNIA •

Basin Priority based on:

- Population
- Number of public and private wells
- Irrigated acreage
- Reliance on groundwater as a primary source
- Groundwater impacts including: Irrigated acreage, overdraft, land subsidence, water quality degradation

Groundwater Basin Prioritization



Statewide Groundwater Basin Prioritization Summary

Basin ranking	Basin count per rank	Percent of total for State	
		GW use	Overlying population
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

Basin Prioritization results — June 2, 2014

Statewide Breakdown

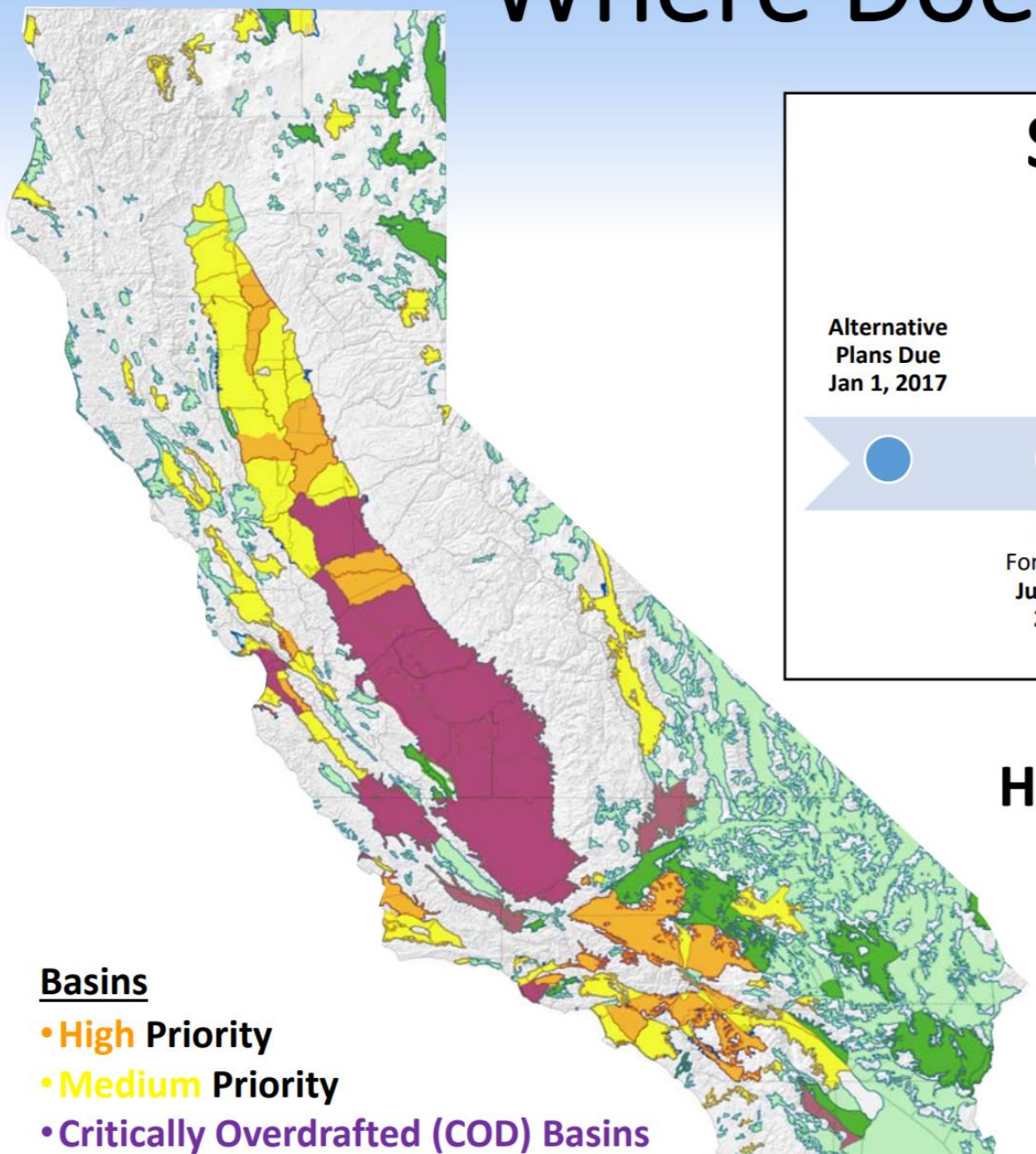
Basin Ranking	Basin Count per Rank	Percent of Total for Hydrologic Region	
		GW Use	Overlying Population
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

127 High & Medium Priority basins

- **96% of groundwater use**
- **88% of overlying population**

http://www.water.ca.gov/groundwater/casgem/

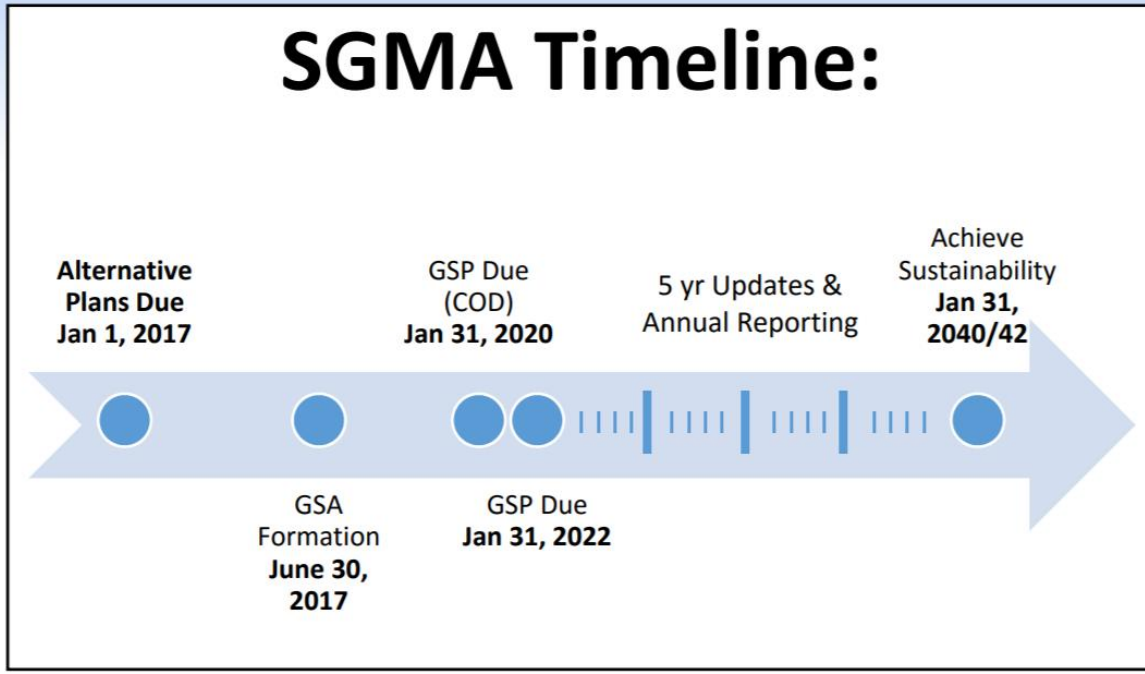
Where Does SGMA Apply?



Basins

- **High Priority**
- **Medium Priority**
- **Critically Overdrafted (COD) Basins**

SGMA Timeline:



High & Medium Priority basins

- **96% of groundwater use**
- **88% of overlying population**

SGMA - roles and responsibilities

- GSA – Planning and implementing agency
- DWR – Regulating and assisting agency
- SWRCB – Enforcing agency
- Tribal Interest and the Feds – Communication, input, participation
- Other stakeholders – Communication and input

Groundwater Sustainability Agency within Basins

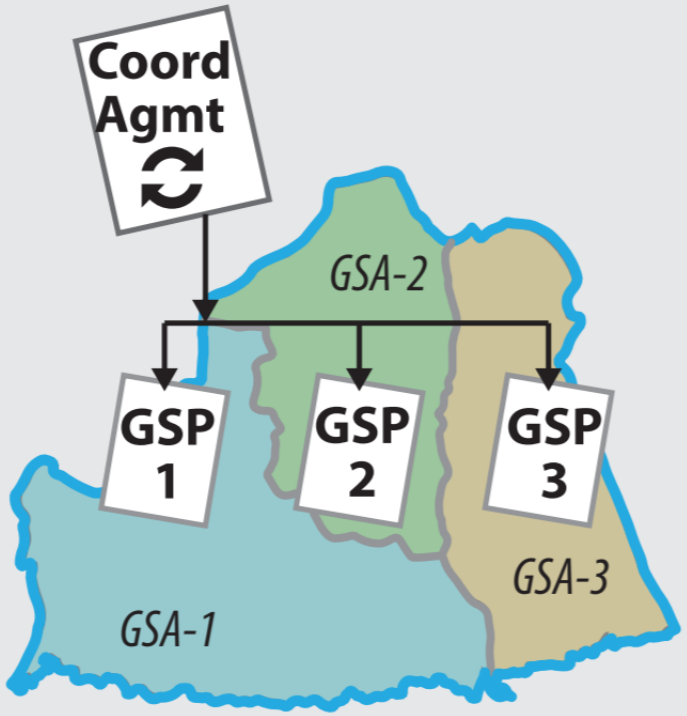
- SGMA defines a GSA as one or more local agencies that implement SGMA's provisions.
- Only public agencies can form a Groundwater Sustainability Agency.
- A local agency is defined as any local public agency that has water supply, water management, or land use responsibilities within a groundwater basin.
- Challenge for public agencies, will need to represent non-public agency interests in the management of the basin.

GSA and GSP combinations

Single GSA, Single GSP

Multiple GSAs, One GSP with optional Interbasin Agreement

Multiple GSAs, Multiple GSPs with required Coordination Agreement



Groundwater Sustainability Agency

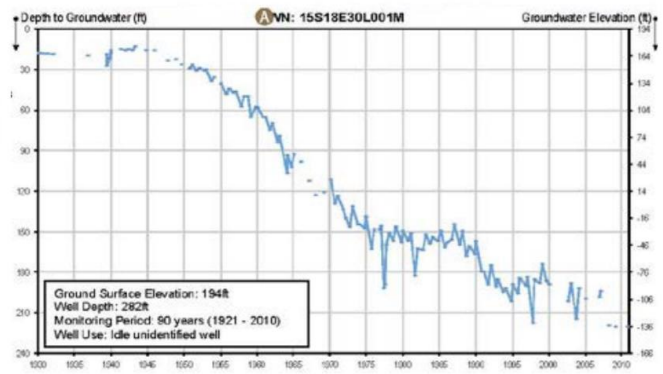
GSA have powers and authorities which include:

- Write Groundwater Sustainability Plan (GSP)
- Enforce a water credit program
- The authority to charge fees & penalties
- The authority to conduct investigations
- Require well registration
- Require reporting
- Take other actions to sustainably manage the basin

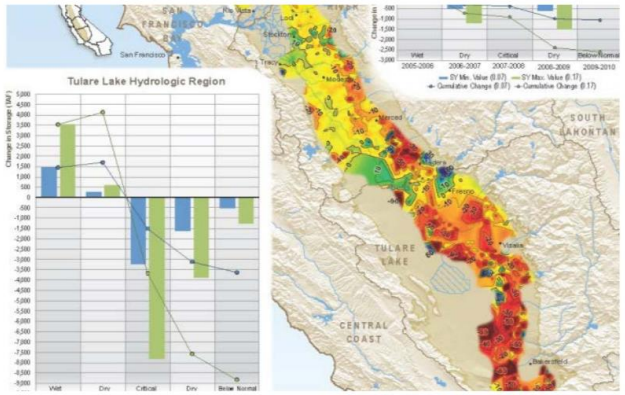
Key requirements for a GSP

- Data Management System
- Groundwater Conditions Assessment
- Hydrogeological Conceptual Model (HCM)
- Water Budget
- Sustainability Criteria
- Monitoring Network
- Projects & Management Actions

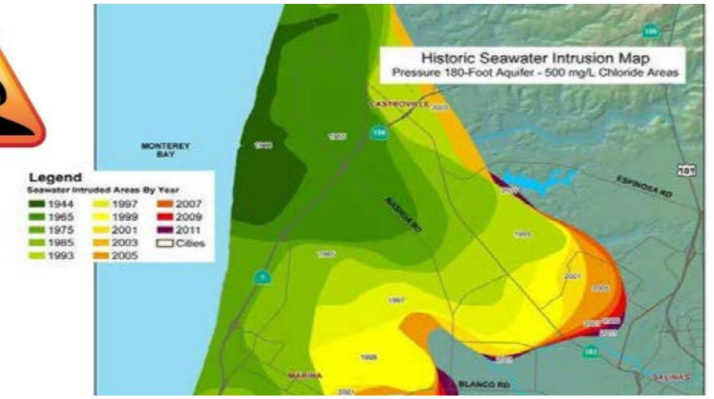
Undesirable results: mitigate Significant and Unreasonable



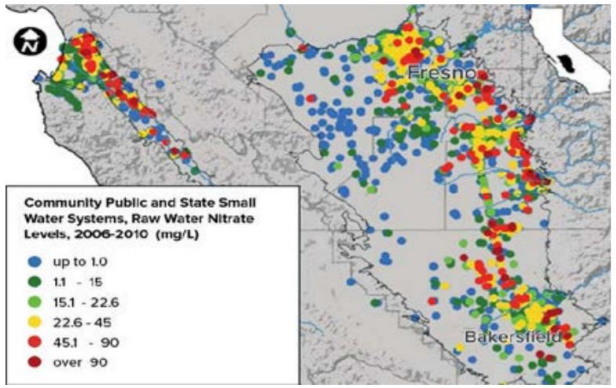
Lowering of Groundwater Levels



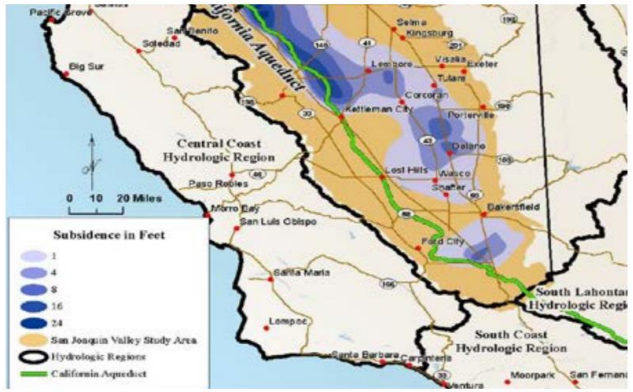
Reduction of Groundwater Storage



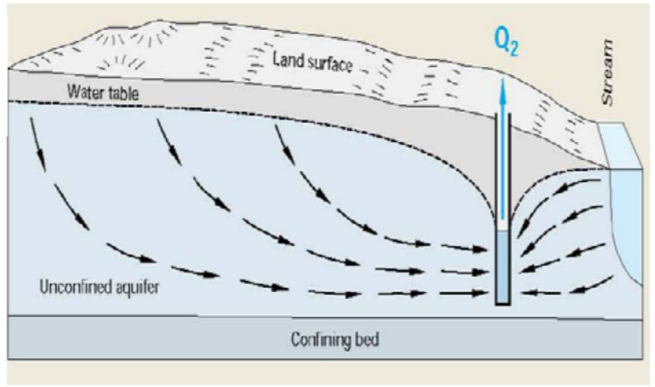
Seawater Intrusion



Groundwater Quality Degradation

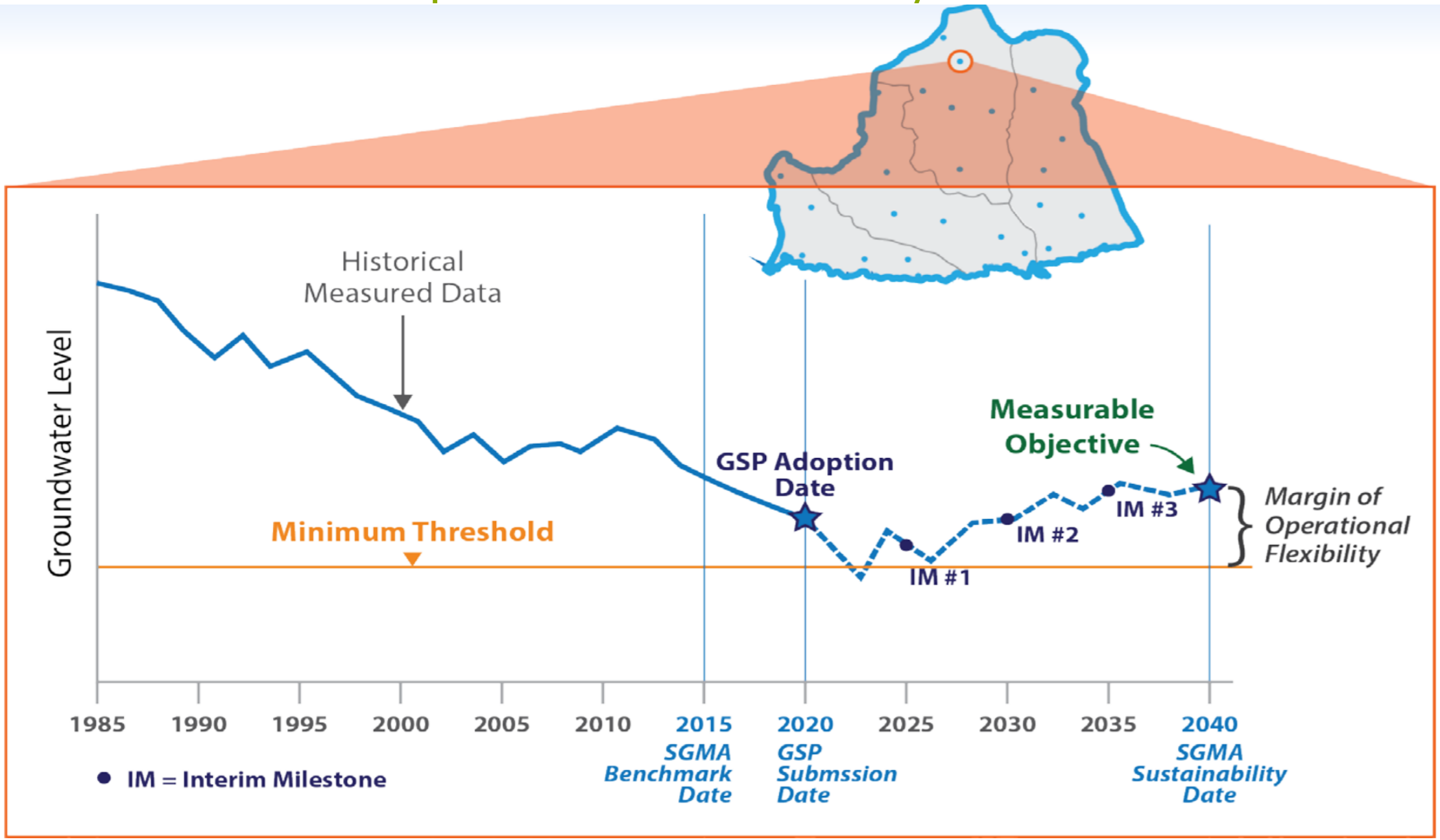


Land Subsidence

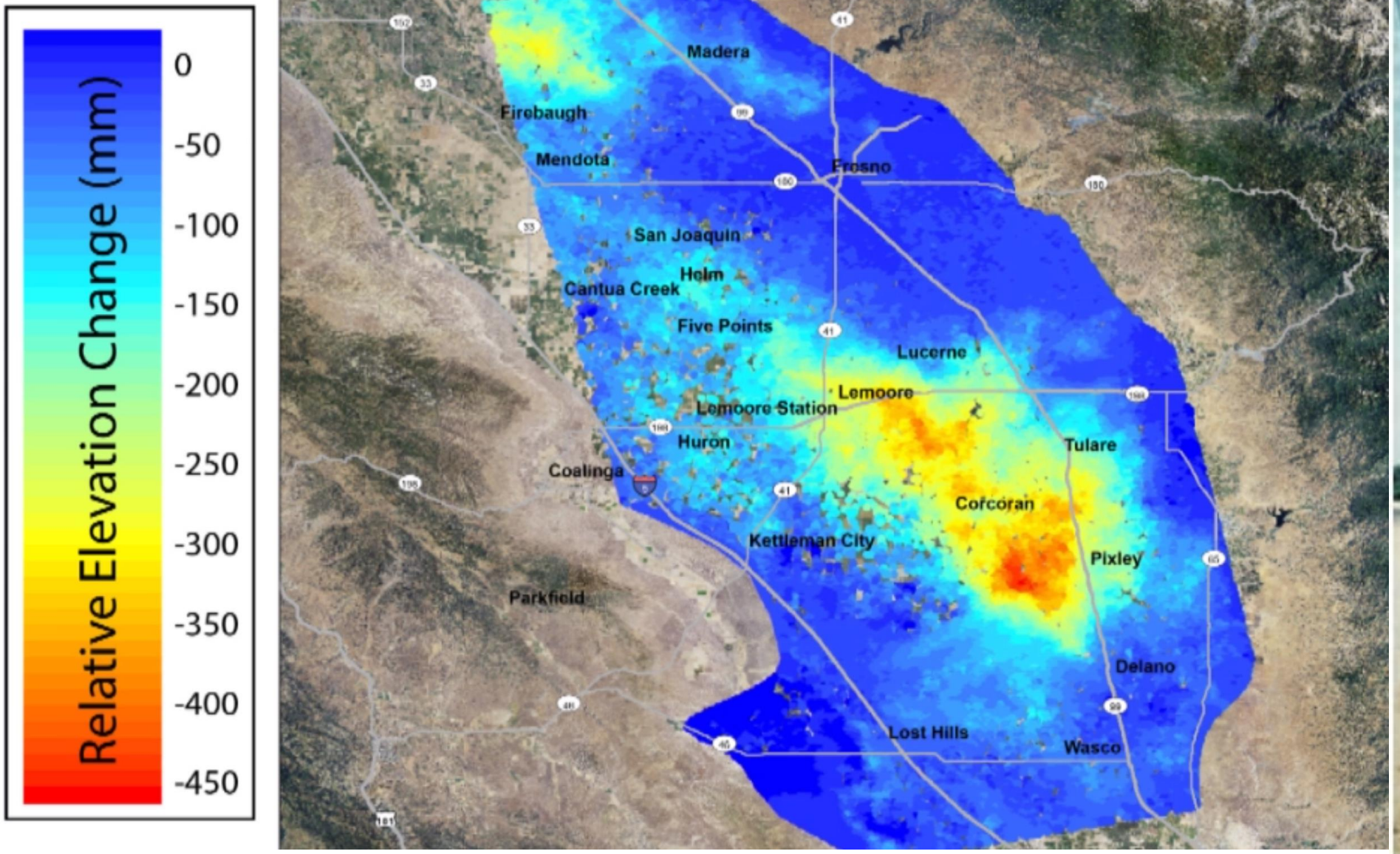


Depletion of Interconnected Surface Water

Groundwater path to sustainability



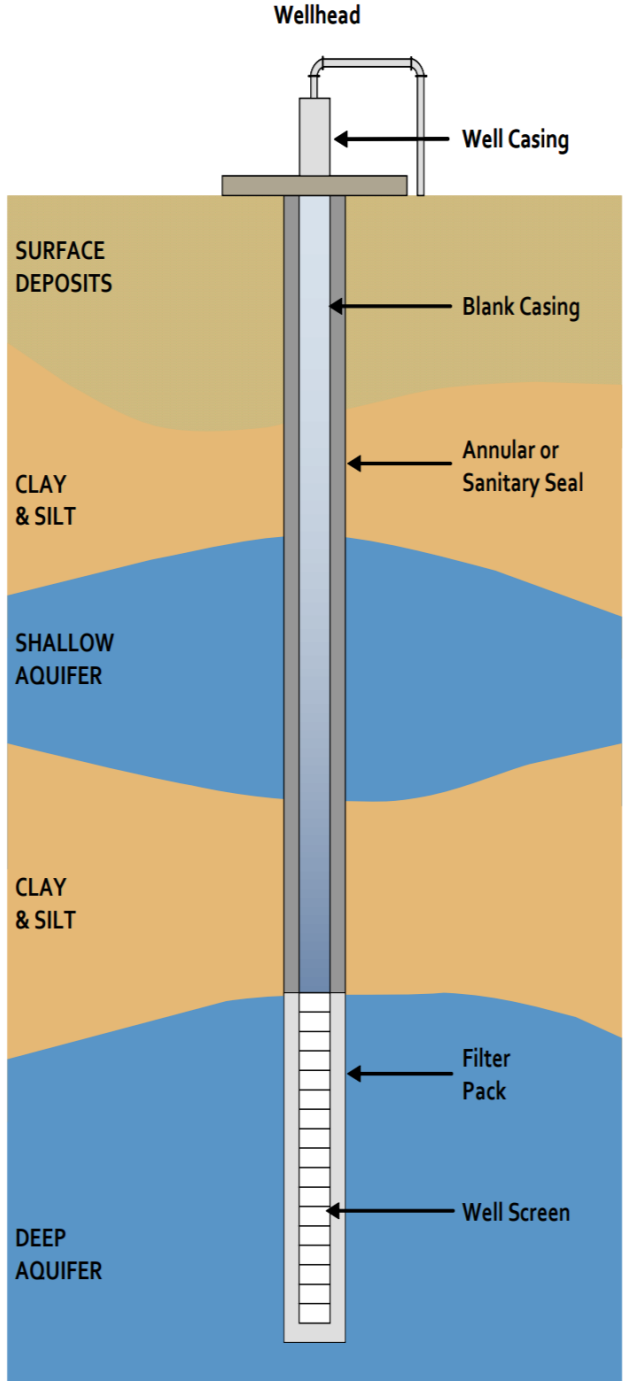
Effects of subsidence 2016-2018



Moving Right Along

Well construction

- Well owners obtain permits from local environmental health agencies or local water districts before construction, modification, or destruction takes place.
- The Department of Water Resources (DWR) and the State Water Board have established well construction standards (well standards).
- Domestic wells must be drilled by a licensed contractor, and must meet applicable local and/or state well standards. Driller supplies well completion report to both owner and local Permitting Agency.



Domestic Well Users and SGMA, the 'Minimis Extractor'

- It is up to the GSA to determine how to manage domestic well uses (<2,500 m^3/year).
- Some GSAs may exempt well users, others may require registration and annual fees.
- SGMA does not authorize GSAs to require domestic well users to meter their wells. State may require specific info from well user.
- Domestic well users may be required to report groundwater information to a local GSA as part of a sustainability plan. In this situation, domestic well users will report directly to the GSA, not the state. The GSA will establish the required level of reporting detail.

Probationary groundwater BASIN

- Opportunity to fix issues
- Board investigations
- All pumpers report
- May require meters

De Minimis users are not exempt.

Meter**REQUIREMENTS**

Permanently Installed

Equipped with totalizer

Accurate to ± 5%

Calibrated every five years

Available for inspections

What does this look like?

50 acre farm extracting
3.5 acre-feet per acre

Unmetered	$4,675
Metered	$2,050
Savings	$2,625

Some final observations

- Groundwater over pumping is seen as a very big issue in California.
- SGMA is very ambitious and sets quite an aggressive timeline
- California has set aside 7 billion dollars to help manage this program.
- Many smaller farmers are forced out of business, and are scooped up by bigger operations for the water credits.
- Paying close attention to how SGMA is doing in California could be a huge learning opportunity for BC and further development of the WSA.

Questions…?