current Western megadrought began in California in 2000
- worst drought in 1200 years?

2014 Gov Jerry Brown signed Sustainable Groundwater Management Act (SGMA), taking effect January 1, 2015

SGMA requires groundwater sustainability agencies (GSAs) in moderate or critically overdrafted groundwater basins to prepare groundwater sustainability plans (GSPs) to limit withdrawals to net sustained yield by 2040, 2070 (2015 baseline)

likely will require pumping cutbacks by irrigators, municipalities

SGMA protects domestic wells from groundwater declines

proposed GSPs still being reviewed by state, revised by GSAs
megadrought in California
2000-2022 megadrought
Cal gw law history (short)

- no state gw (ground water) regulation until 2014
- 27 gw basins have court adjudications to limit withdrawals to “safe yield,” ~ long term net recharge
  - believe these adjudicated basins include municipalities and municipal water suppliers
- over 500 gw basins, xx identified as critical, requiring GSPs
- if local GSP is in adequate, CDWR can impose, enforce a state plan
organizational issues

- each gw basin has perhaps dozens of entities that could become the GSA (gw sustainability agency) for the basin
  - organizational nightmare!
- eligible agencies include surface water districts & organizations
- lots of gw districts too, including municipalities, private municipal gw suppliers, etc.
- could be why Cal officials envious of NRDs 😊
GW use in Cal & Neb

- Cal: 79% agricultural [irrigation & livestock]
  - 19% municipal
  - 02% managed wetlands
- Neb: 94% irrigation
  - 04% municipal
  - 02% rural domestic & stock watering
  - <1% power plant cooling
Central Valley

- aka San Joaquin Valley – where most Cal gw depletion occurs
- UCal study estimates overdraft as 11% of annual central valley gw withdrawals
  - recharge could deal with about 2.75%, or 25% of overdraft
  - reduce withdrawals 8.25% (75% of overdraft) & then are sustainable? should be doable IMO
- proposed plans would recharge 8.25% & reduce withdrawals 2.75%
  - not enough recharge supplies though for 8% recharge
CDWR plan review

- I reviewed the CDWR reviews of the 10 Central Valley GSPs
  - #11 is still under CDWR review
- all 10 reviewed plans were deemed “incomplete” which means GSAs have 180 days to revise & resubmit. If plans don’t change enough, will be deemed “inadequate” and CDWR & SWRCB will develop interim state plan.
- generally plans did not propose much “demand side management” i.e. pumping reductions
  - redefined “sustainability” to IMO say that depletion = sustainable.
- revisions to CDWR this summer so stay tuned 😊
gw cutbacks

- how could GSAs reduce gw withdrawals?
- metering & allocation (i.e. pumping limits)
- tax pumping, increase tax over time until reach pumping limit to achieve sustainability
- tax pumping & purchase & retire gw allocations to achieve sustainability (my personal favorite)
- reduce allocations to sustainable level over time & allow allocations to be sold (another personal favorite)
- will be interesting (for me) to see what revised plans do in this regard.
will GSPs limit gw pumping?

Groundwater use capped for some Tulare County farmers

JANUARY 11, 2022 • by Lois Henry

- East Kaweah GSA: around 10 inches per acre
  - 2 sister GSAs -- vary on procedures – disapproved
irrigation cutbacks, con’t

- Madera County GSA caps gw to 1.65 AF/acre (19.8 inches/acre)
  - $500/AF penalty for overuse
  - 1.65 AF to be reduced to 0.85 AF (~10 inches) by 2035
  - 6 sister GSAs – no pumping limits or delayed caps – why plan rejected

- big challenge: some irrigators get ditch water plus well water; others only on wells. Same gw allocation? If not, how much?

- several multi-party GSAs “inadequate” because the GSAs did not have a consistent basin-wide program.
  - difficult needle to thread in most basins
Indian Wells GSP approved

- plan proposed to reduce irr pumping from 62% of basin gw pumping to 0% by 2040.
- remaining pumping is municipal & Navy base
- basin would be balanced or sustainable by 2040.
- many lawsuits filed, challenging ag parts of plan
- GSA filed lawsuit for a court adjudication of sustainable yield for the gw pumpers.
  - hard to tell where it will end up
domestic well protection options

- one SGMA “undesirable result” is drying up domestic wells
  - subsidence; seawater intrusion; gwq; surface water; gw storage
- UCal: none of proposed GSPs protect domestic wells from drying up during drought
- CDWR: ditto
- CDWR suggested that if GSA paid to deepen domestic wells to keep them operative, that would be adequate protection
- in the absence of paying for deeper wells, plans apparently will have to limit seasonal & long term declines to keep area domestic wells operating even during drought
  - that would sharply limit gw depletion IMO
- rural water district another option?
NRD domestic well program?

- in Neb, domestic wells have to sue irrigators to have chance of recovering damages when irr pumping dries up domestic well (if irrigator doesn’t help with replacement well costs)
  - cheaper to just drill replacement well
- NRD could develop program to help domestic well owners during shortages
- NRD could cost share on deepening domestic wells if well met NRD requirements, e.g. spring well check, maintenance requirements, reasonable depth etc.
- otherwise domestic well owner on their own – rain barrels, additional storage, new well etc.
SGMA: what happens next?

- GSAs have 180 days from when draft GSP is deemed “incomplete” to submit revised GSP.
- If CDWR determines resubmitted GSP is inadequate, GSA(s) meet with CDWR & SWRCB. If IMO looks like GSA & state are too far apart, state will begin developing a temporary plan until (if ever) the GSA develops an acceptable plan.
- Will be interesting to see how revised GSPs – hitting CDWR this July & thereafter – deal with depletion & domestic well protection.
- I expect first GSA to have its plan turned down twice to sue to see whether SGMA is constitutional.
Questions?

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