

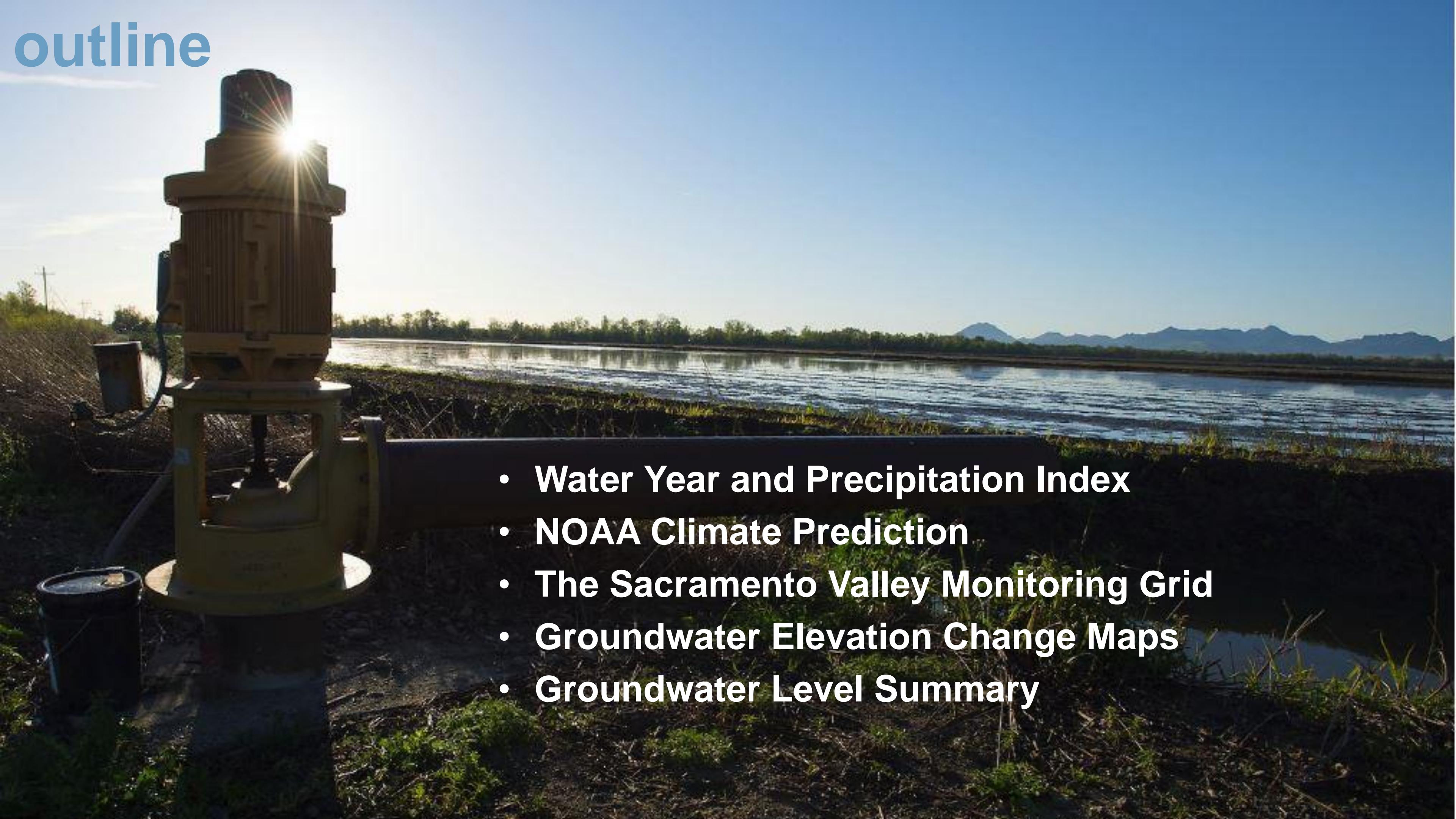
REGIONAL FORUM

Sustainable Groundwater Management in the Northern Sacramento Valley

2018 Fall Groundwater Level Update

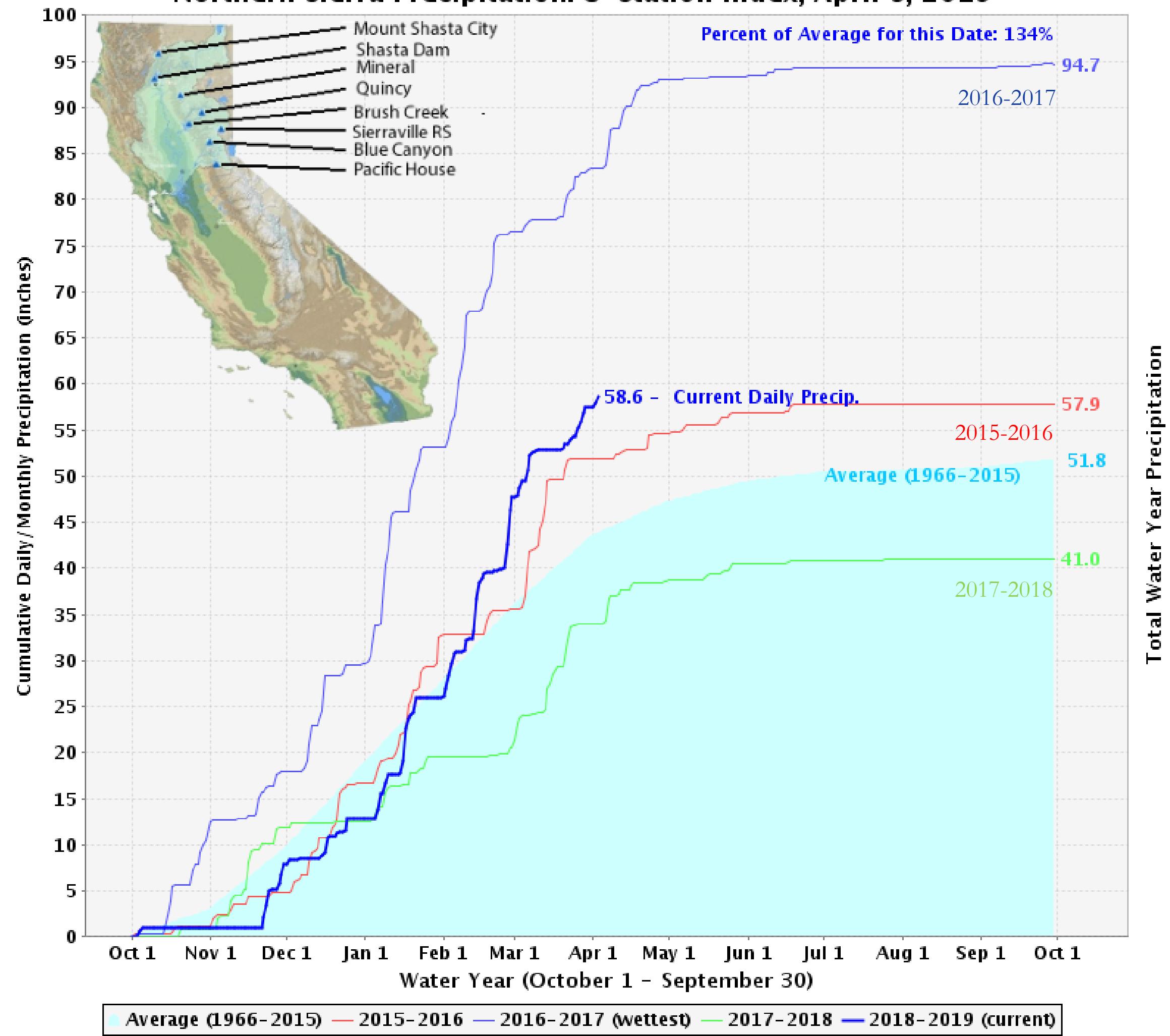
Glen Gordon
Senior Engineering Geologist
Data Collection and Management Section
DWR Northern Region

outline

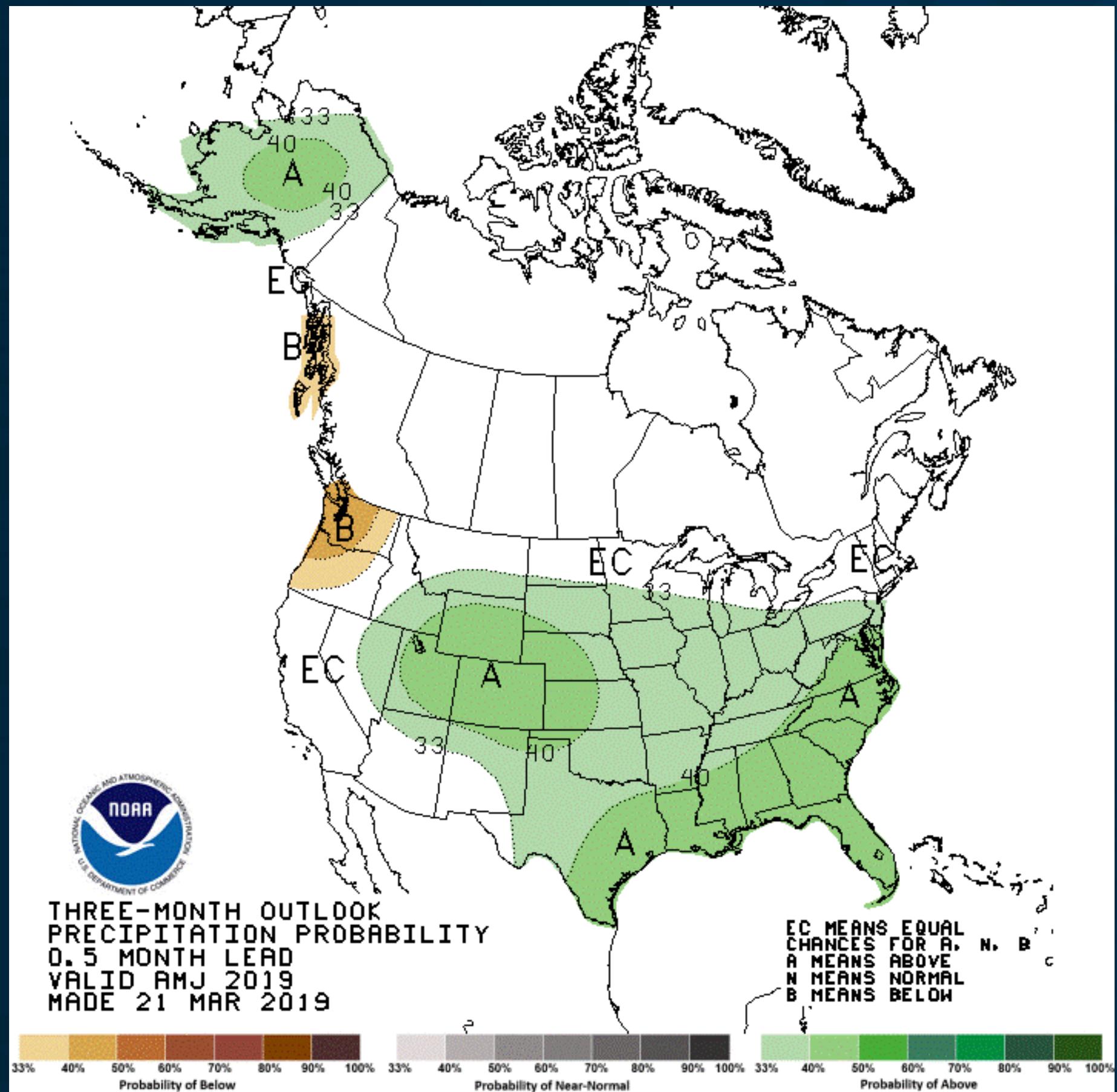
A large irrigation sprinkler is spraying a powerful stream of water onto a field of green grass. The sun is positioned behind the sprinkler, creating a bright, lens-flare effect and casting long shadows. In the background, there is a body of water and a range of mountains under a clear blue sky.

- Water Year and Precipitation Index
- NOAA Climate Prediction
- The Sacramento Valley Monitoring Grid
- Groundwater Elevation Change Maps
- Groundwater Level Summary

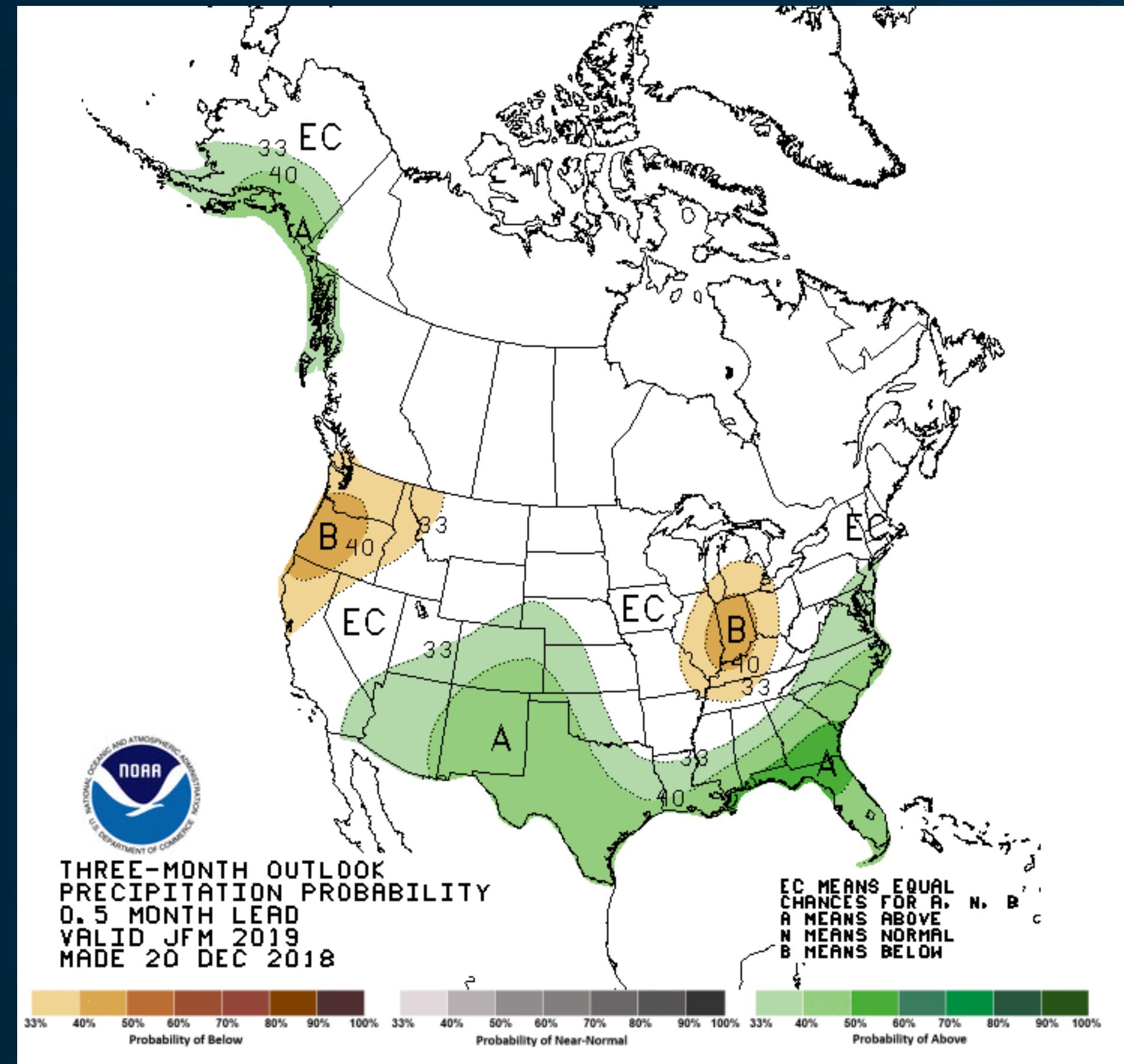
Northern Sierra Precipitation: 8-Station Index, April 3, 2019



April, May, June – Precipitation Prediction



Jan, Feb, March – Precipitation Prediction

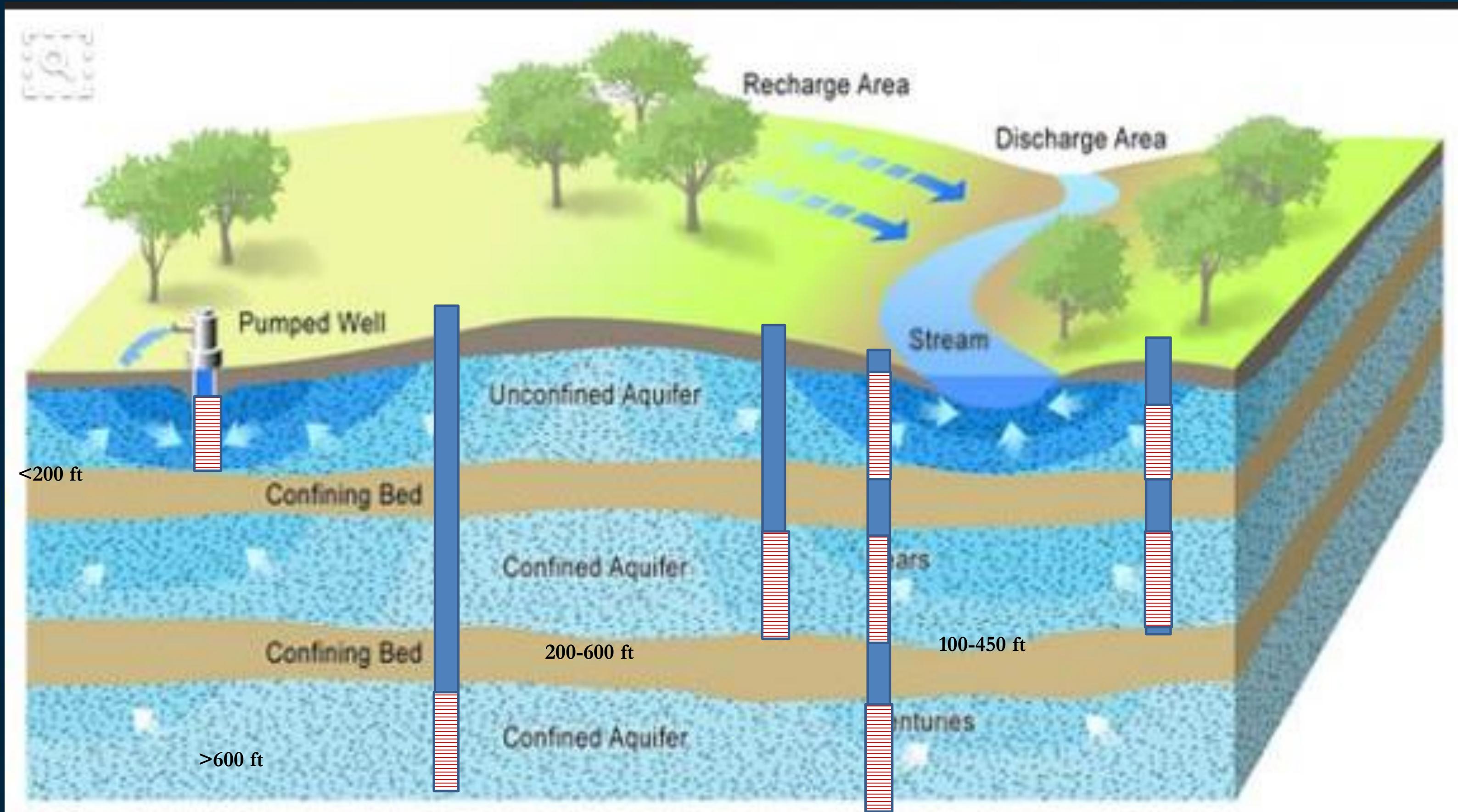


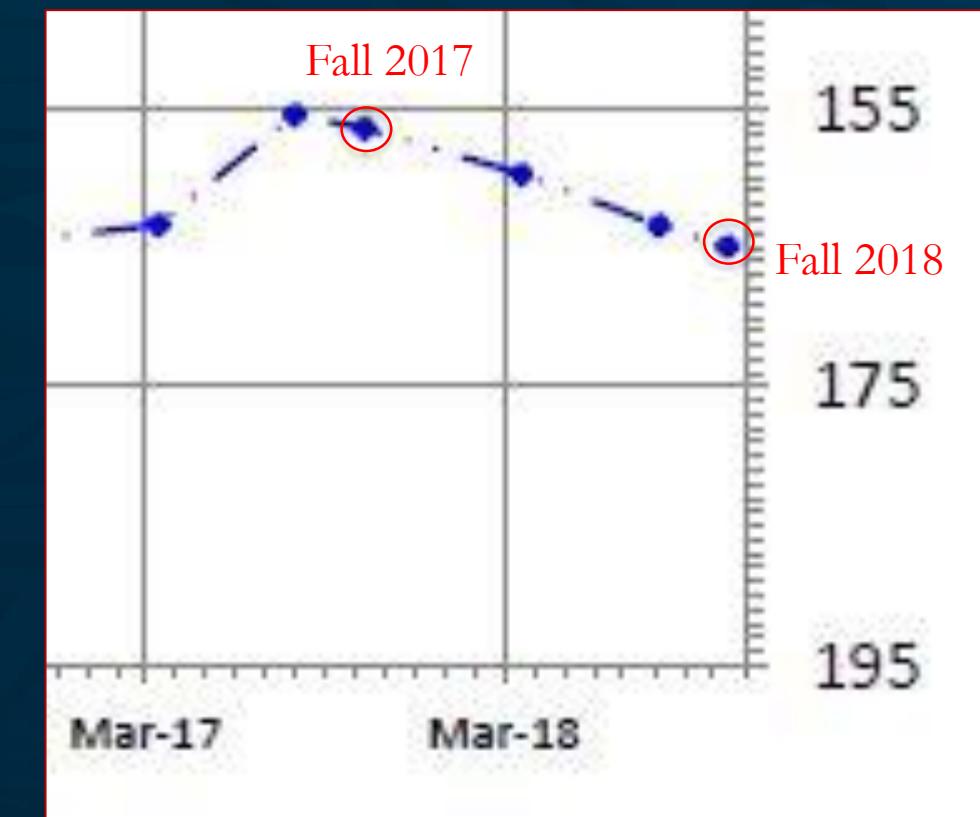
Sacramento Valley Groundwater Monitoring and Groundwater Elevation Maps

- DWR's Northern Region Office measures groundwater levels in about ~560 wells in the Sacramento Valley, in the spring, summer, and fall. Additional measurement are provided by numerous cooperators.
- Groundwater level data are then grouped for analysis by well depth:
 - Average: 100 to 450 ft-bgs (feet below ground surface)
 - Shallow: less than 200 ft-bgs
 - Intermediate: 200 to 600 ft-bgs
 - Deep: greater than 600 ft-bgs



Well Depth Example

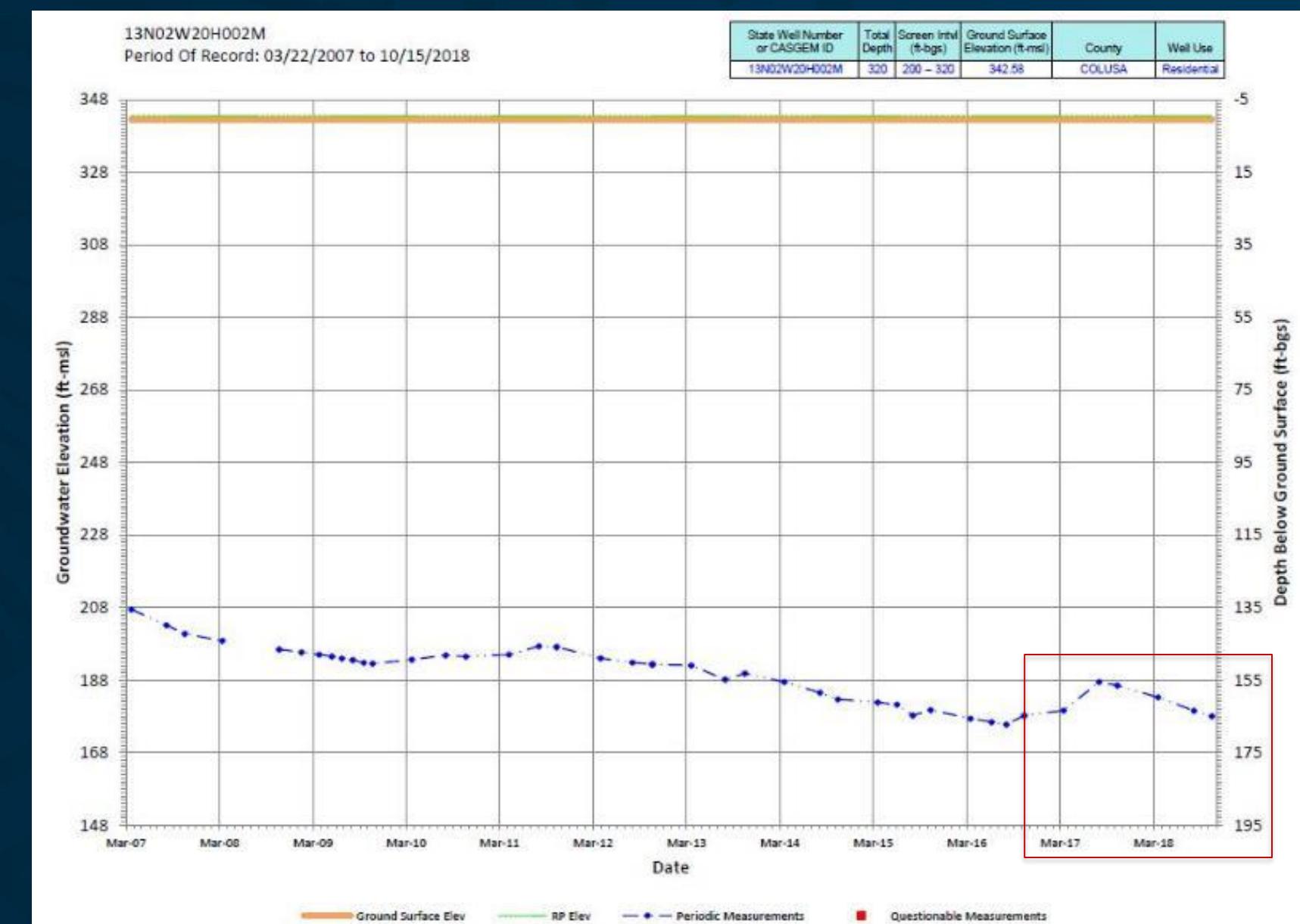




Groundwater Elevation Change Maps

Fall 2017-2018

- Wells 100-450 ft deep
- Wells greater than 600 ft deep



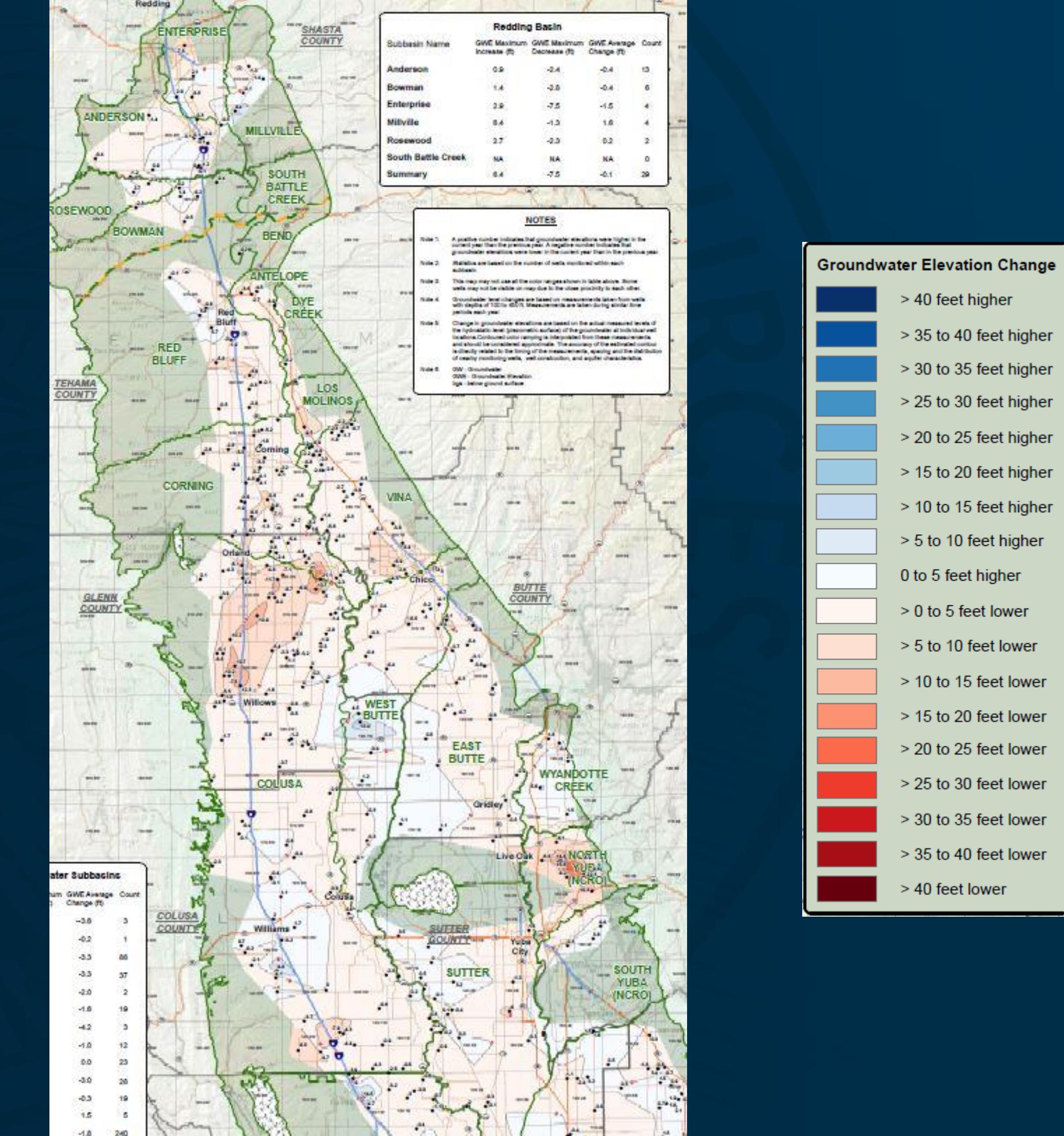
Groundwater Elevation Change Map

Fall 2017 to 2018

Average Well Depths:
100 to 450 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 240, 29
Maximum increase: 13.4 ft, 6.4 ft.
Maximum decrease: -21.1 ft, -7.5 ft
Average change: -1.8, -0.1 ft.



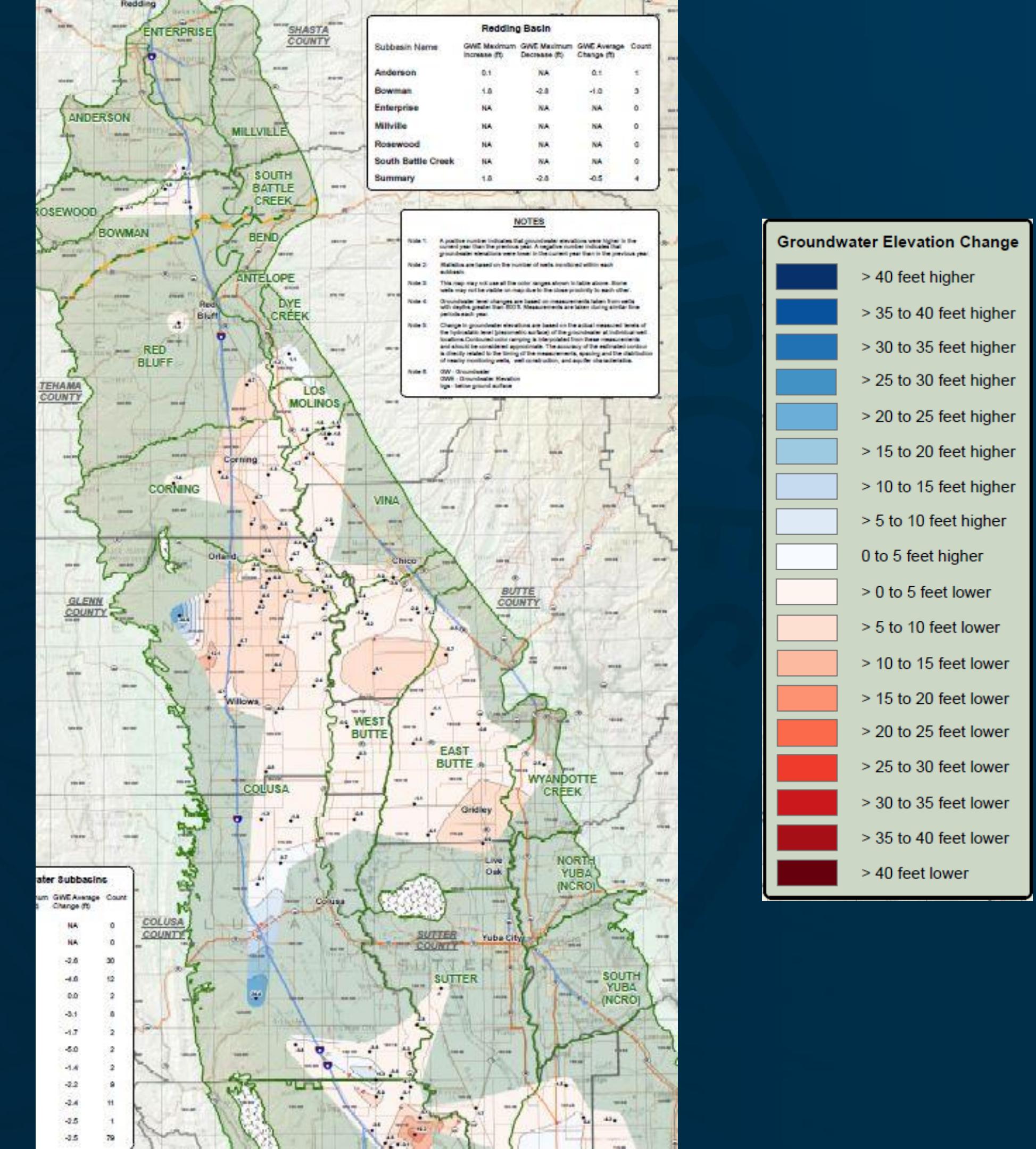
Groundwater Elevation Change Map

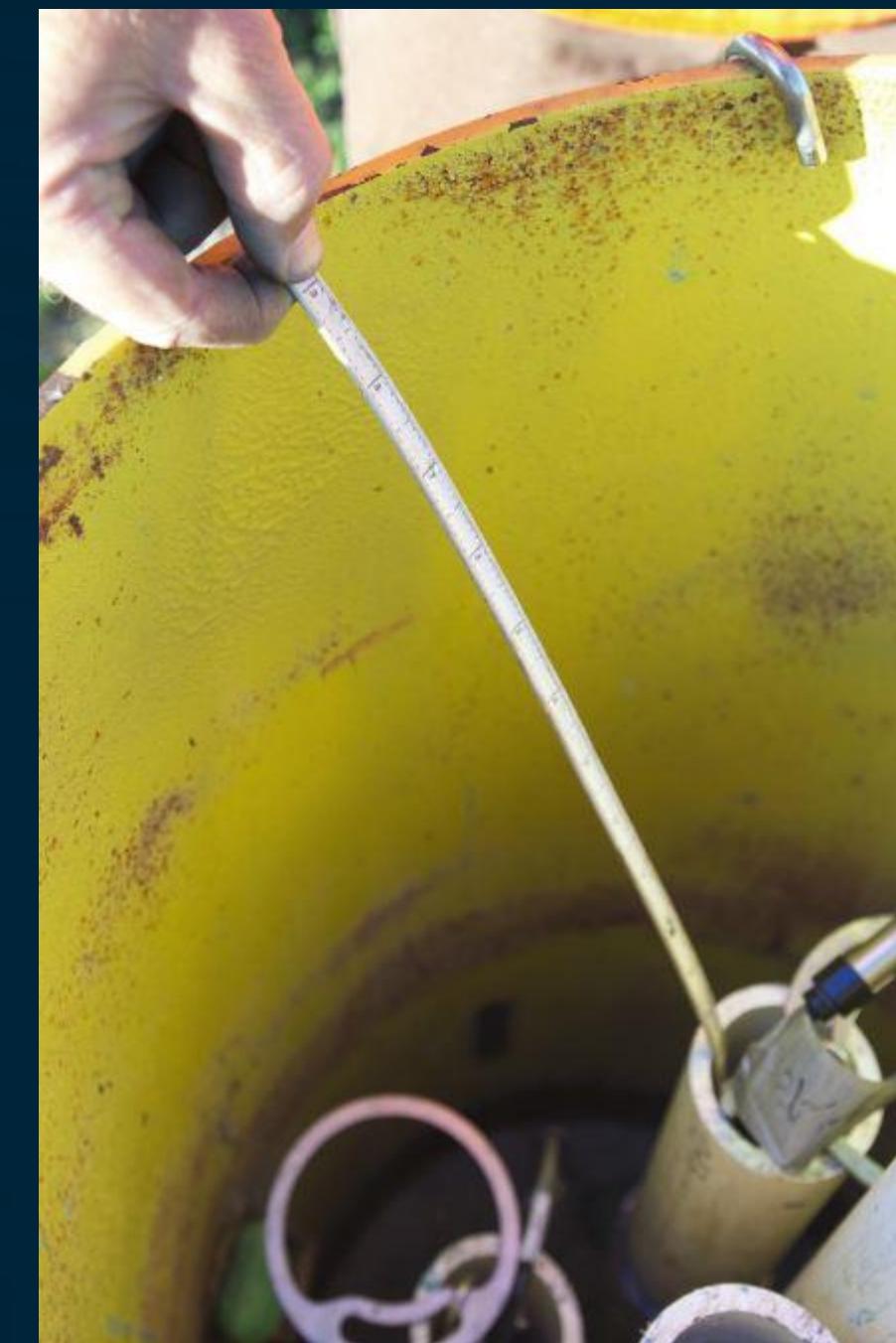
Fall 2017 to 2018

Well Depths:
> 600 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 79, 4
Maximum increase: 24.9 ft, 1.8 ft
Maximum decrease: -12.1 ft., -2.8 ft.
Average change: -2.5 ft., -0.5 ft.

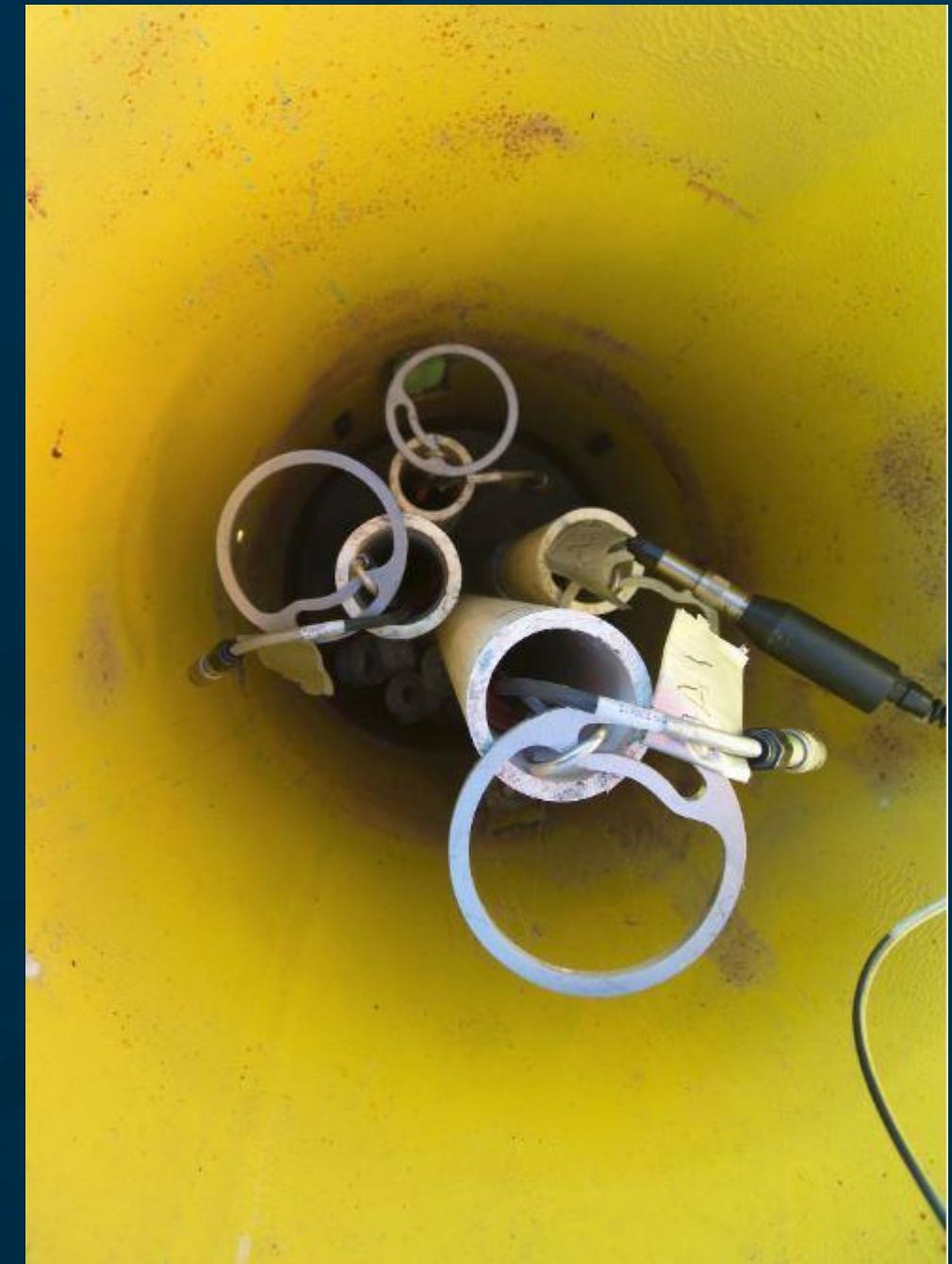




Groundwater Elevation Change Maps

Fall 2011-2018

- Wells 100-450 ft deep
- Wells greater than 600 ft deep



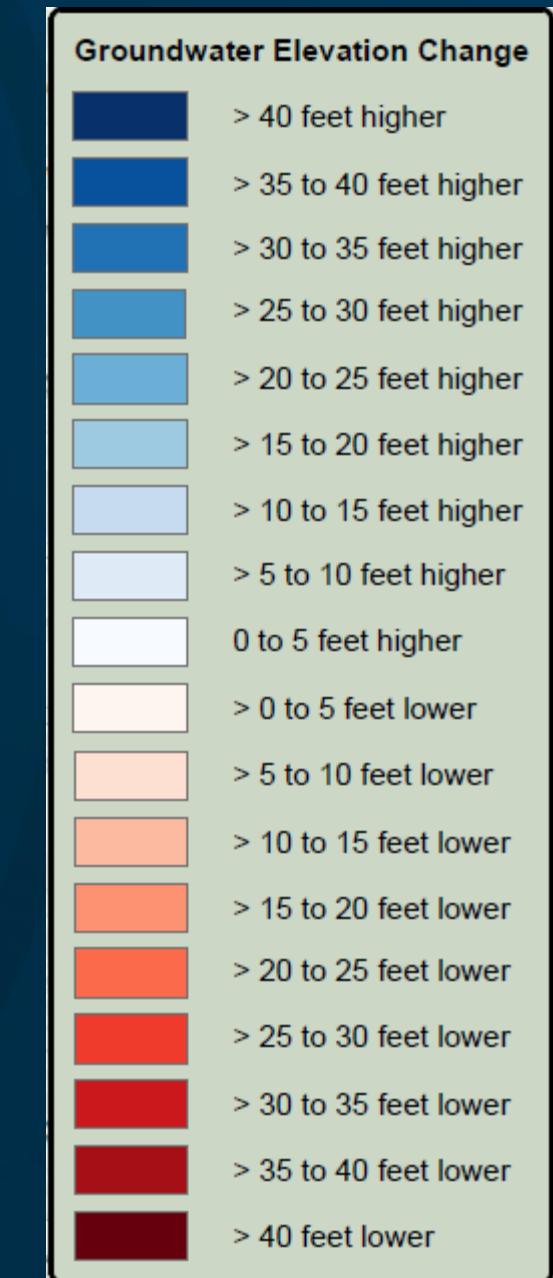
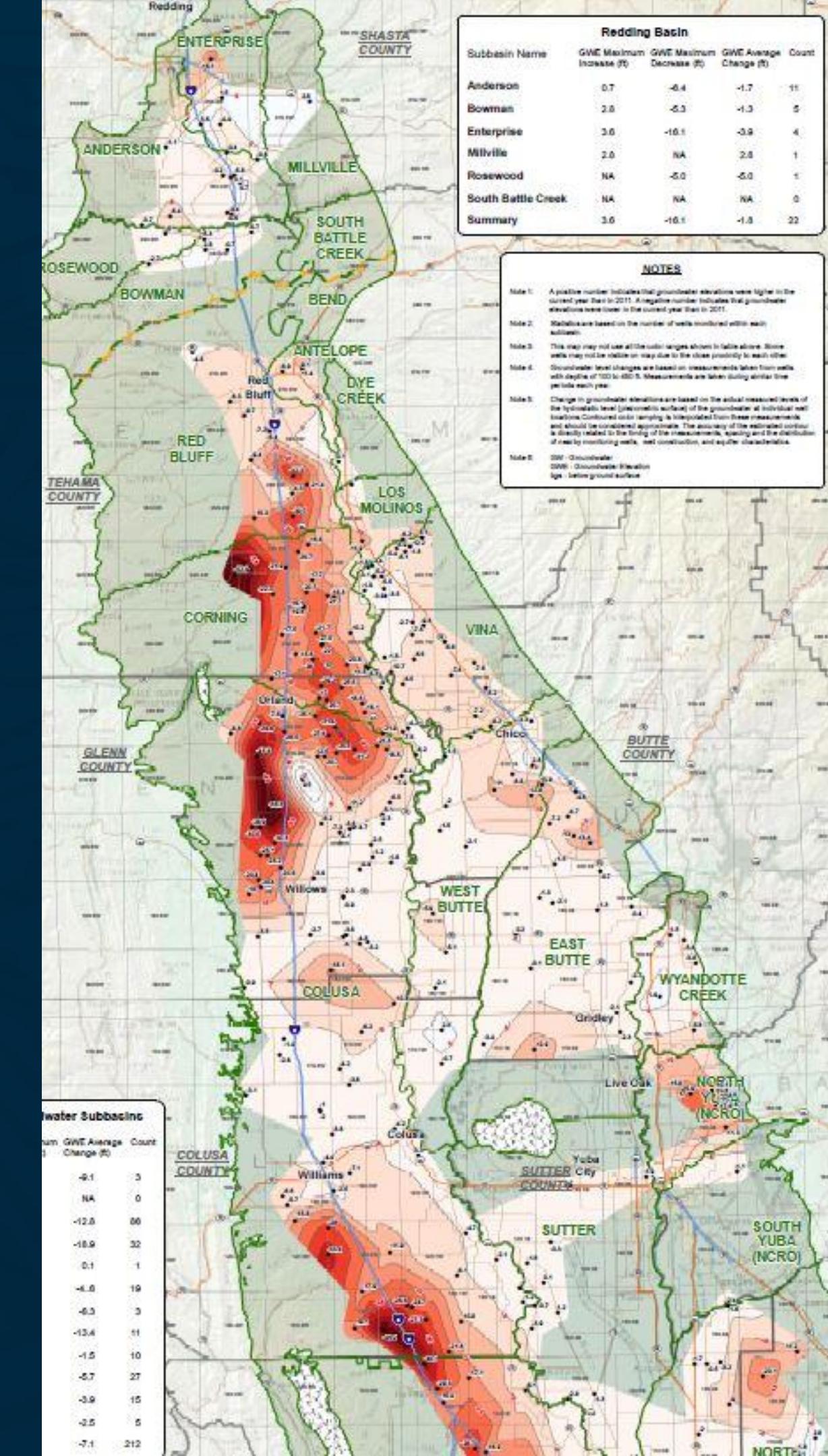
Groundwater Elevation Change Map

Fall 2011 to 2018

Average Well Depths:
100 to 450 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 212, 22
Maximum increase: 9.5ft, 3.6 ft.
Maximum decrease: -55.3 ft., -16.1 ft.
Average change: -7.1 ft., -1.8 ft.



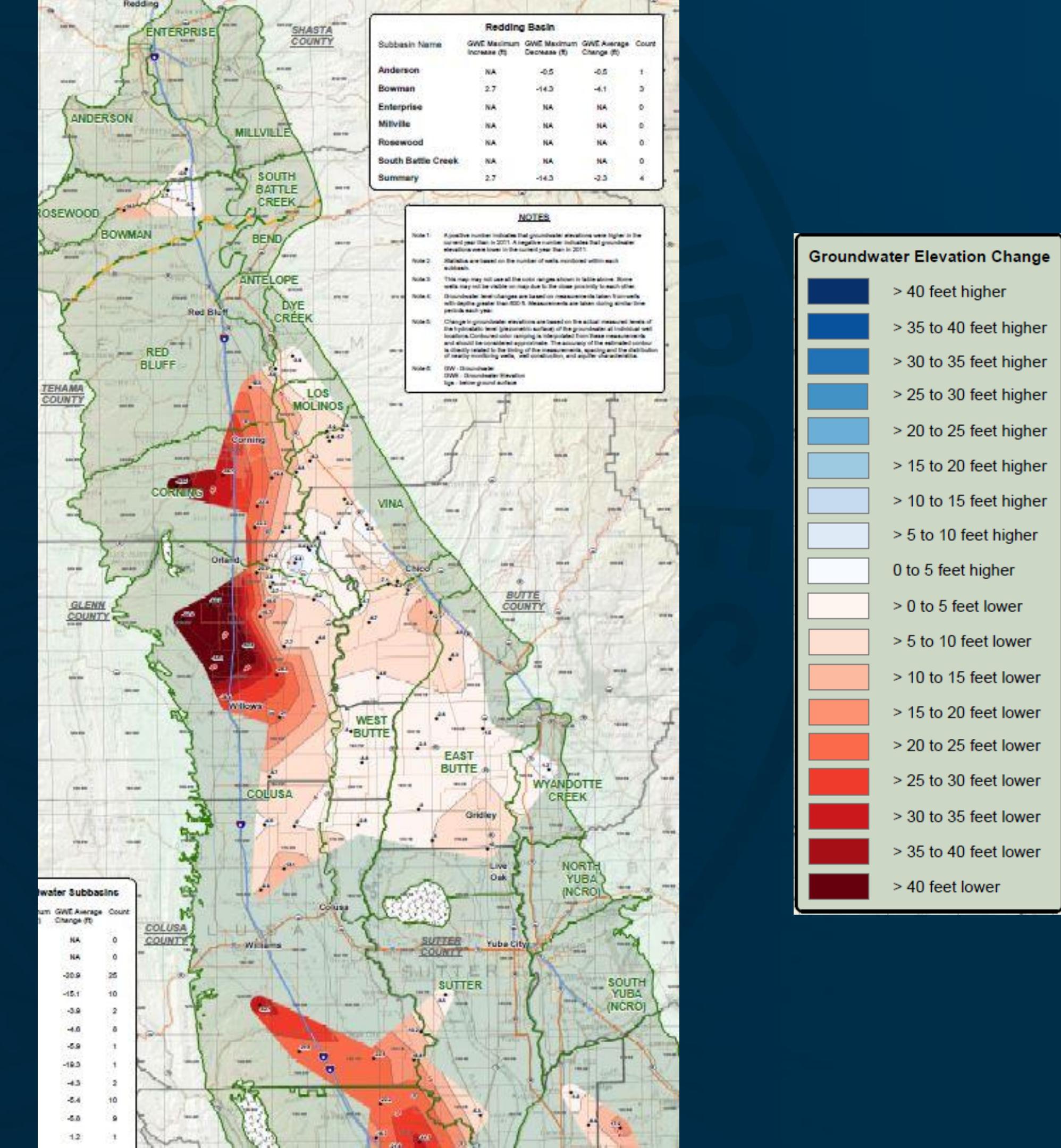
Groundwater Elevation Change Map

Summer 2011 to 2018

Well Depths:
> 600 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 69, 4
Maximum increase: 9.4 ft, 2.7 ft.
Maximum decrease: -60.9 ft, -14.3 ft.
Average change: -8.4 ft, -2.3 ft





Groundwater Elevation Change Maps

Fall 2004-2018

- Wells 100-450 ft deep
- Wells greater than 600 ft deep



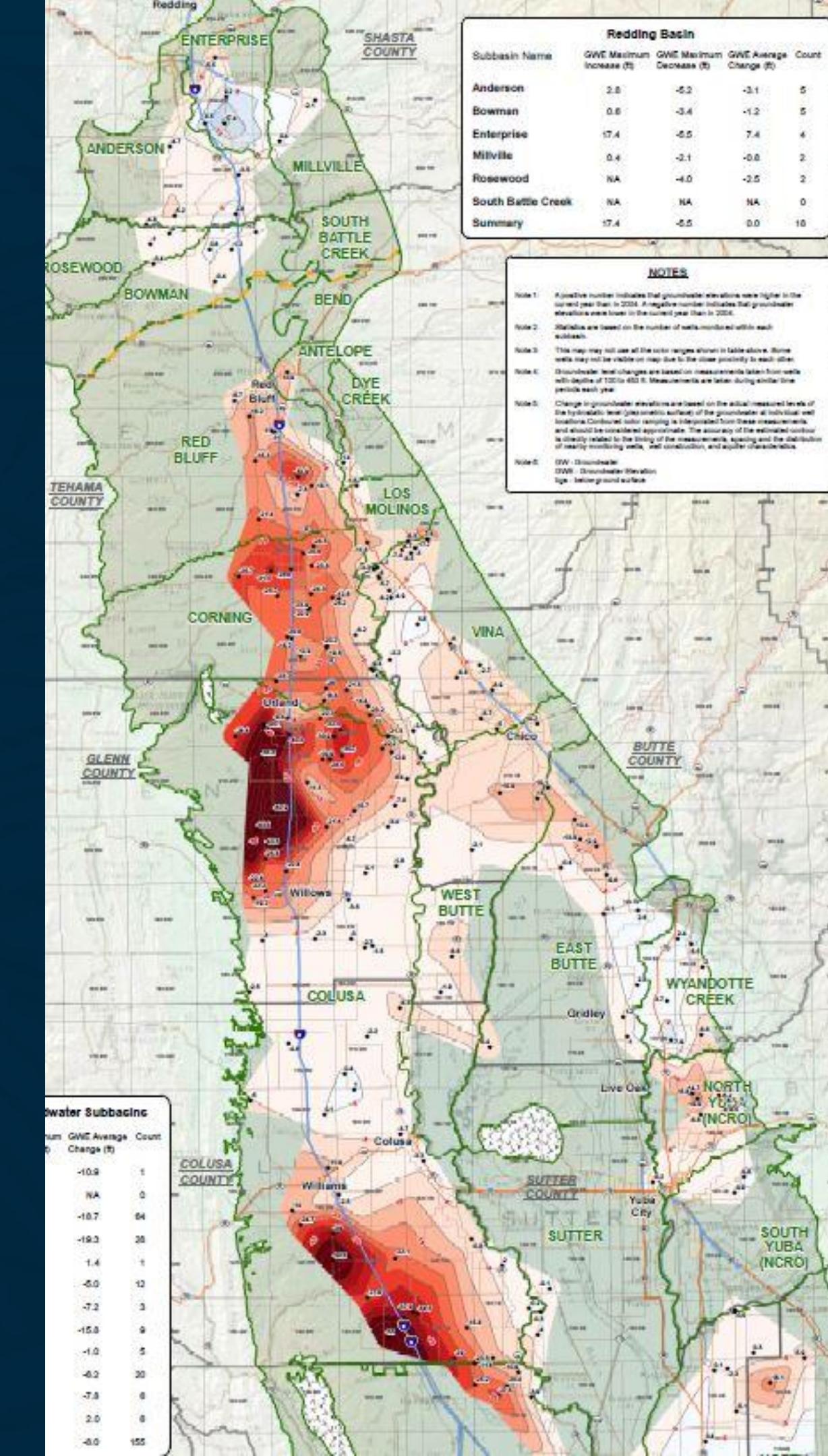
Groundwater Elevation Change Map

Fall 2004 to 2018

Average Well Depths:
100 to 450 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 155, 18
Maximum increase: 7.9 ft, 17.4 ft.
Maximum decrease: -80.9 ft., -5.5 ft.
Average change: -8.0 ft., 0.0ft.



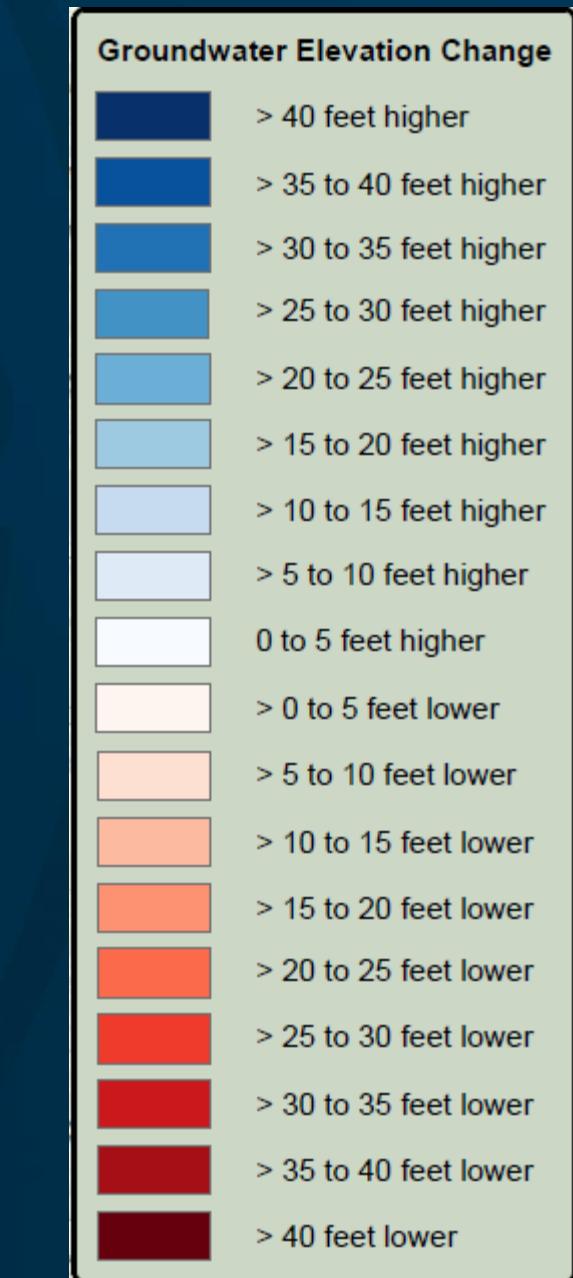
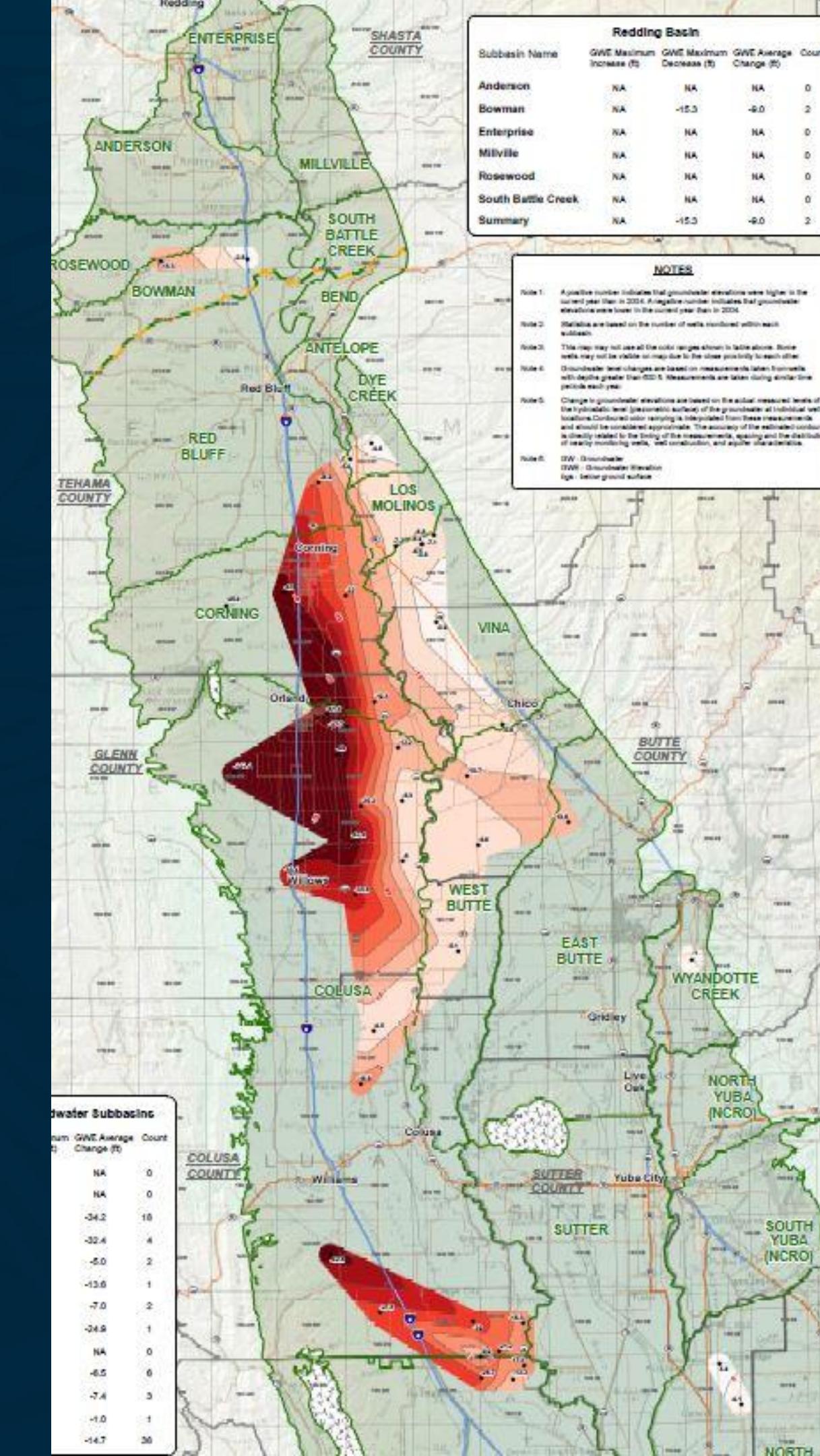
Groundwater Elevation Change Map

Fall 2004 to 2018

Well Depths:
> 600 feet
below ground surface

Sacramento Valley and Redding Groundwater Basins

Number of wells: 38, 2
Maximum increase: NA, NA
Maximum decrease: -141.4 ft, -15.3 ft.
Average change: -14.7 ft, -9.0 ft



Summary – Average Fall Change

Shallow-Intermediate Zones (100-450 ft deep wells)

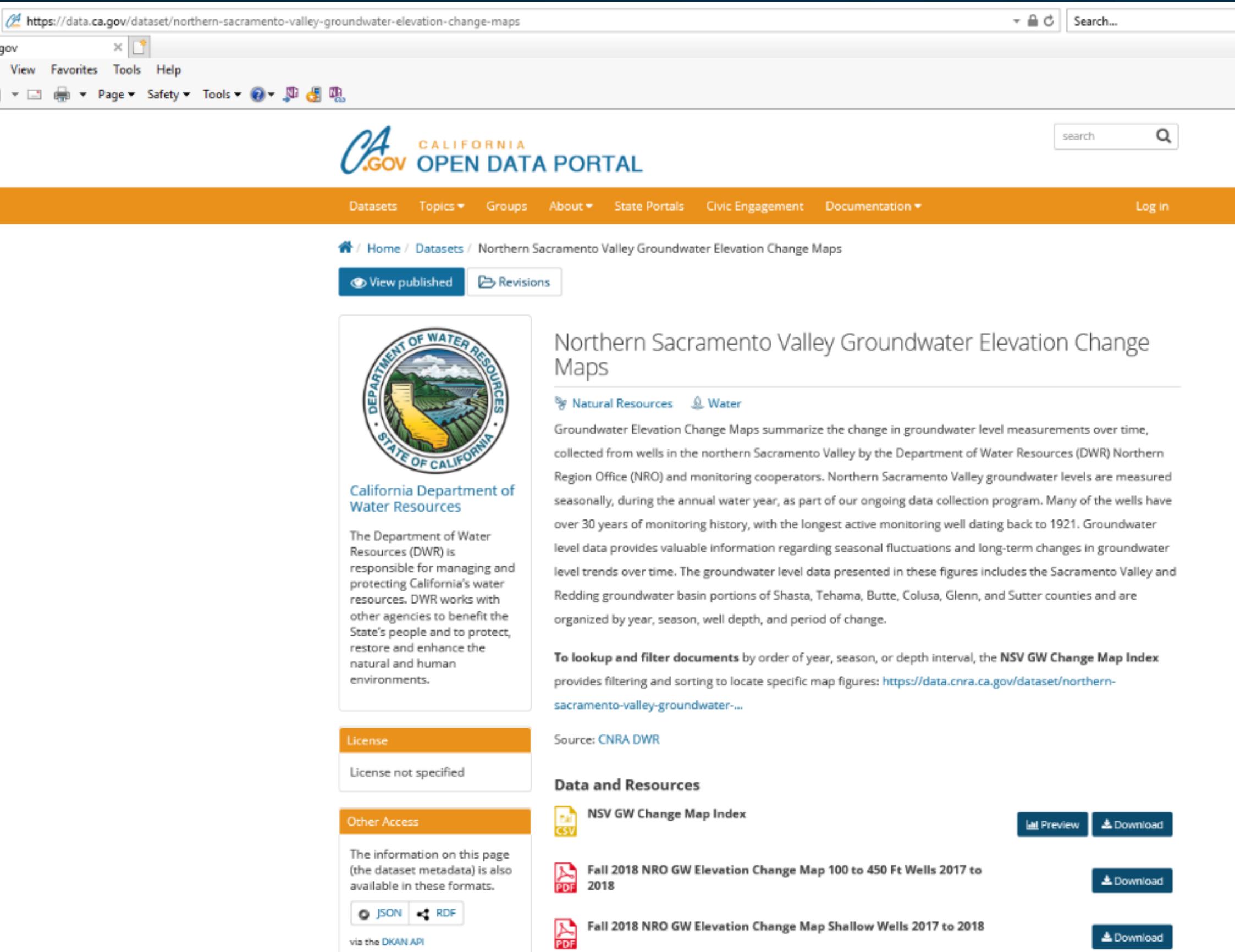
	Sacramento Valley	Redding Basin
2017-18	-1.8	-0.1
2011-18	-7.1	-1.8
2004-18	-8.0	0.0

Deep Aquifer Zones (>600 ft deep wells)

	Sacramento Valley	Redding Basin
2017-18	-2.5	-0.5
2011-18	-8.4	-2.3
2004-18	-14.7	-9.0



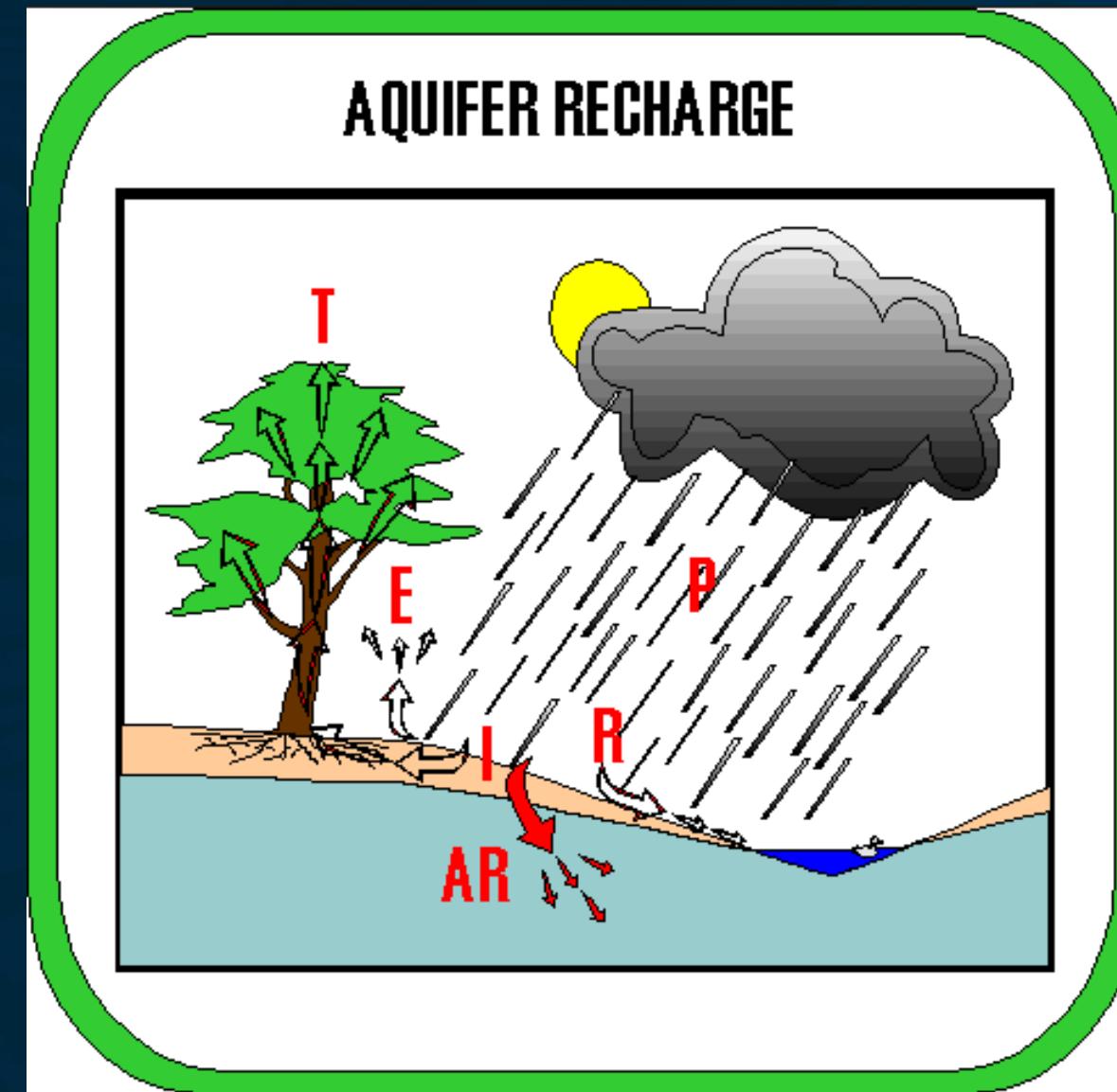
Maps are available on the web on the Open Data Platform



The screenshot shows a web browser displaying the California Open Data Portal. The URL in the address bar is <https://data.ca.gov/dataset/northern-sacramento-valley-groundwater-elevation-change-maps>. The page title is "Northern Sacramento Valley Groundwater Elevation Change Maps". The California Department of Water Resources logo is visible. The main content area describes the dataset, mentioning the Department of Water Resources (DWR) and its responsibilities. It also provides a link to the NSV GW Change Map Index. The "Data and Resources" section lists three downloadable files: "NSV GW Change Map Index" (CSV, Preview, Download), "Fall 2018 NRO GW Elevation Change Map 100 to 450 Ft Wells 2017 to 2018" (PDF, Download), and "Fall 2018 NRO GW Elevation Change Map Shallow Wells 2017 to 2018" (PDF, Download).

https://data.ca.gov/dataset/northern-sacramento-valley-groundwater-elevation-change-maps

Spring 2019 Groundwater Change Maps Coming Soon.



Questions? Comments?
Thank You