

REGIONAL FORUM

Sustainable Groundwater Management in the Northern Sacramento Valley


2018 Fall Groundwater Level Update

Glen Gordon

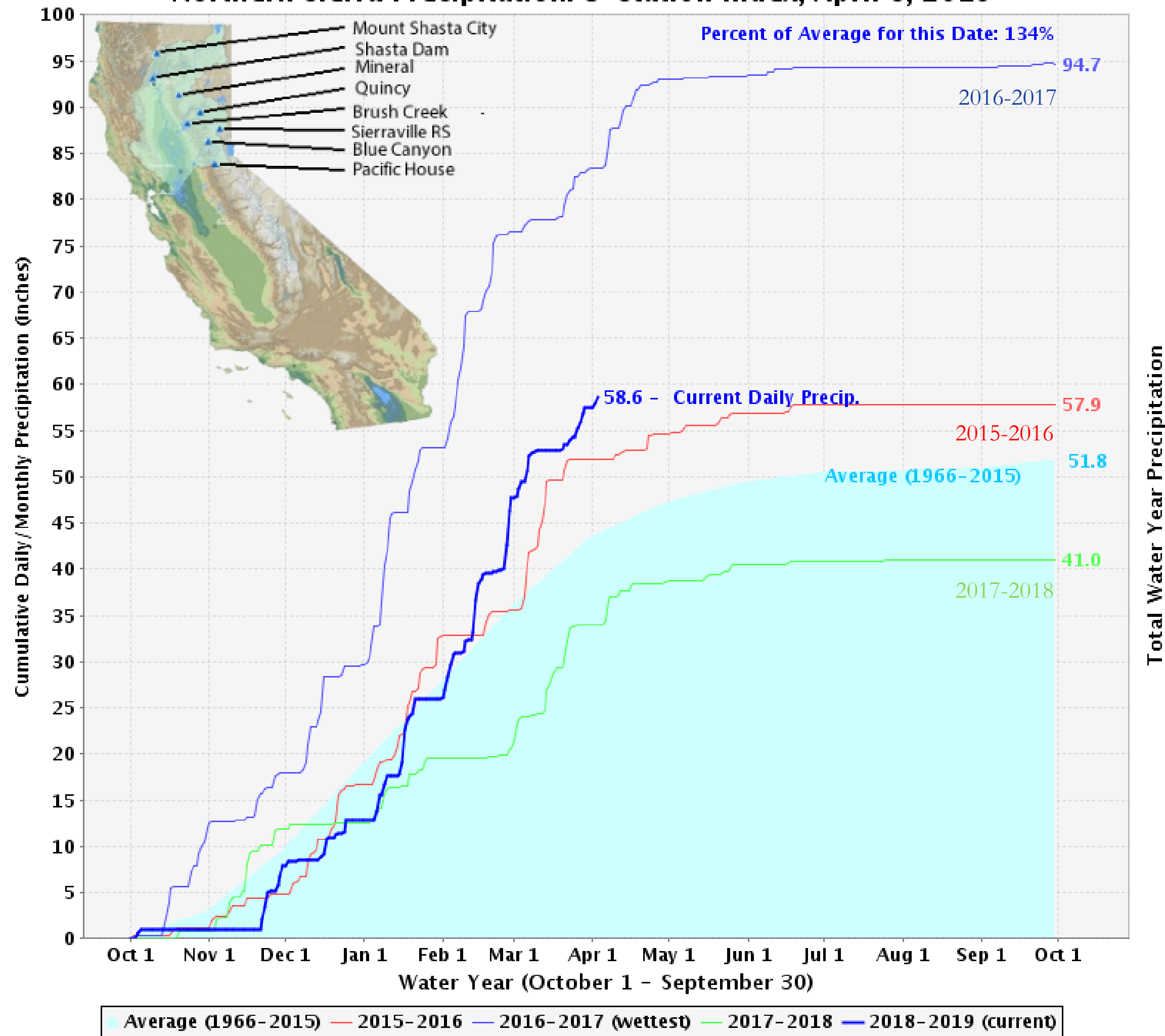
Senior Engineering Geologist

Data Collection and Management Section

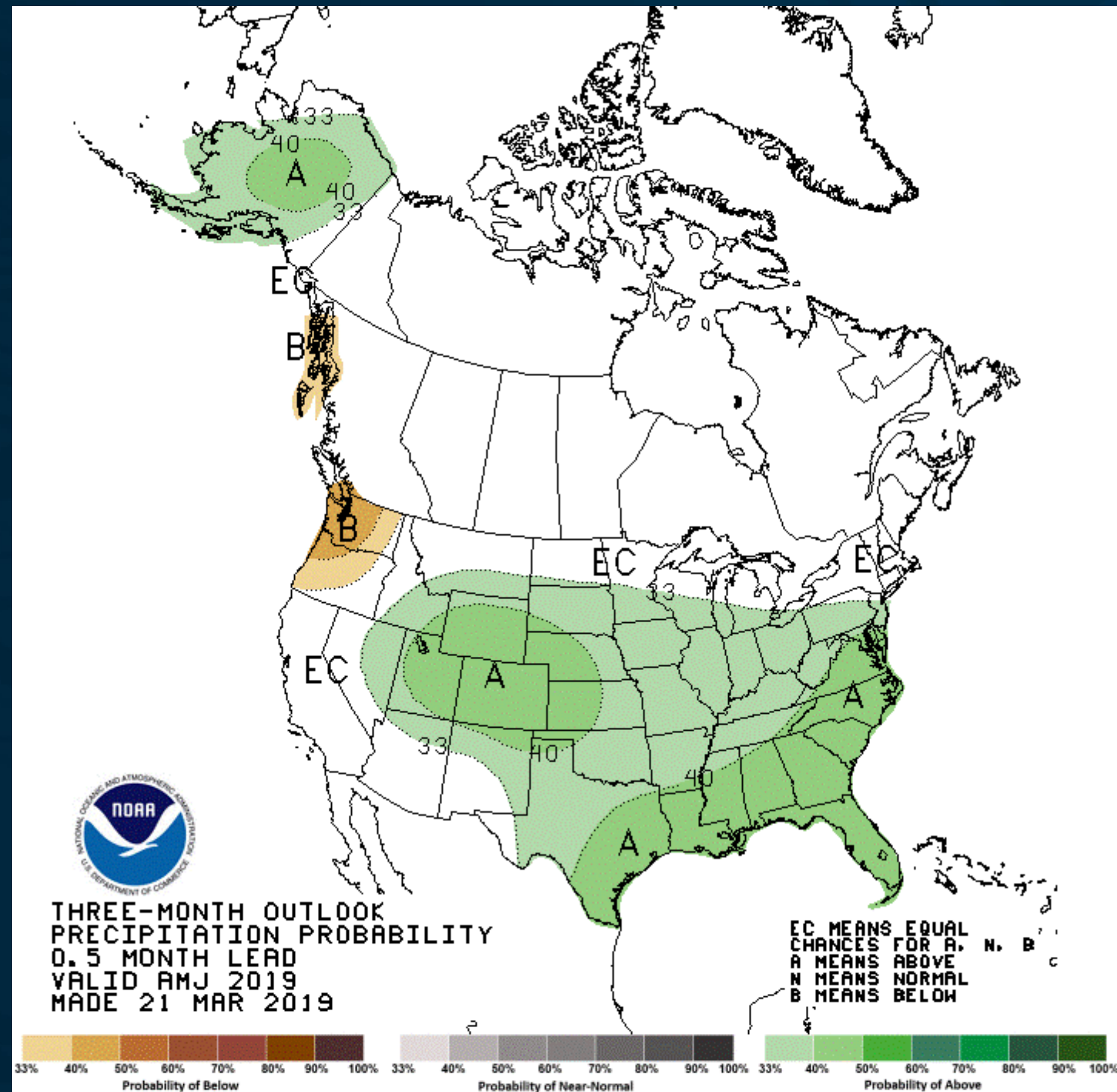
DWR Northern Region

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

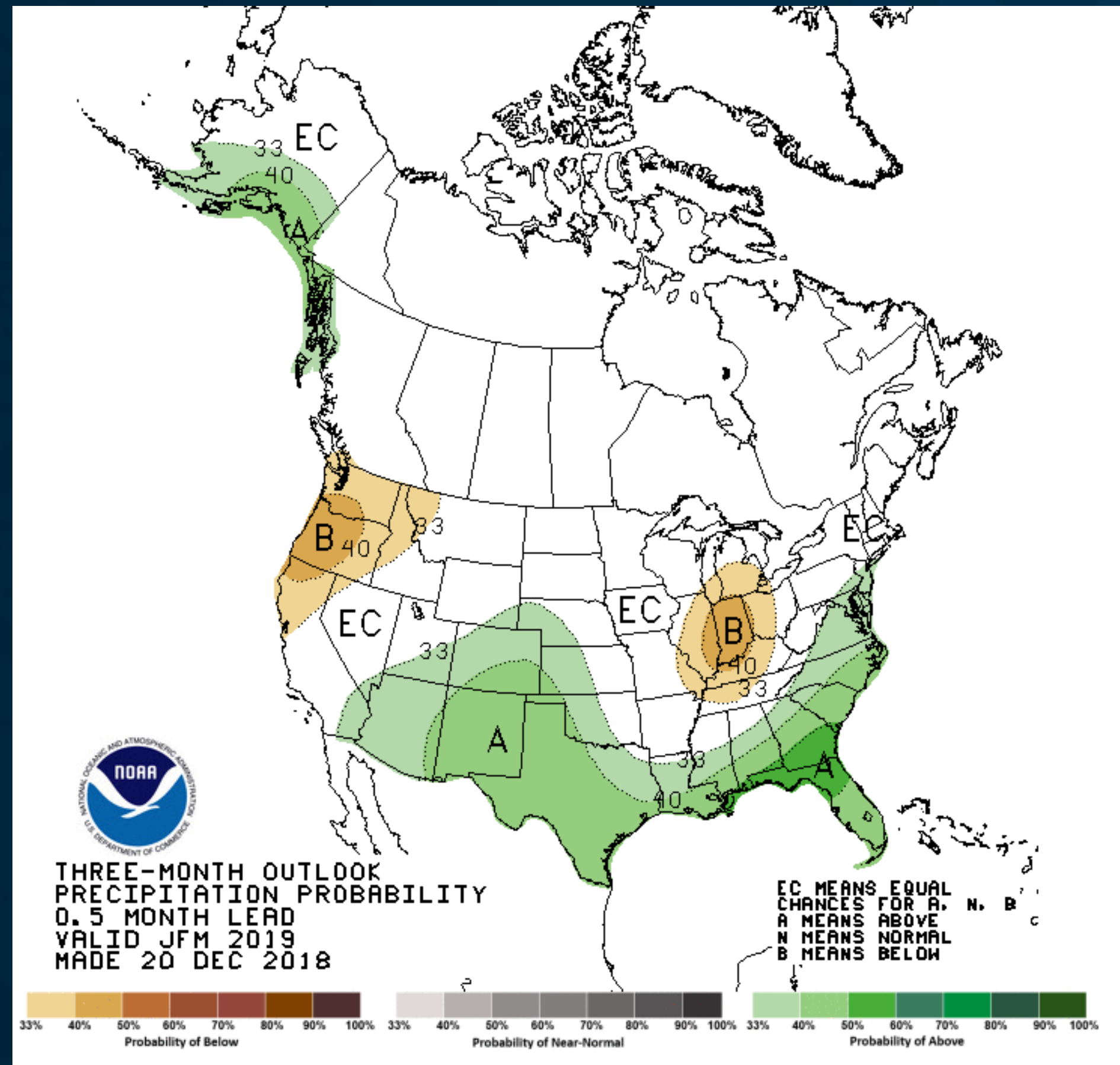
Northern Sierra Precipitation: 8-Station Index, April 3, 2019



April, May, June – Precipitation Prediction



Jan, Feb, March – Precipitation Prediction

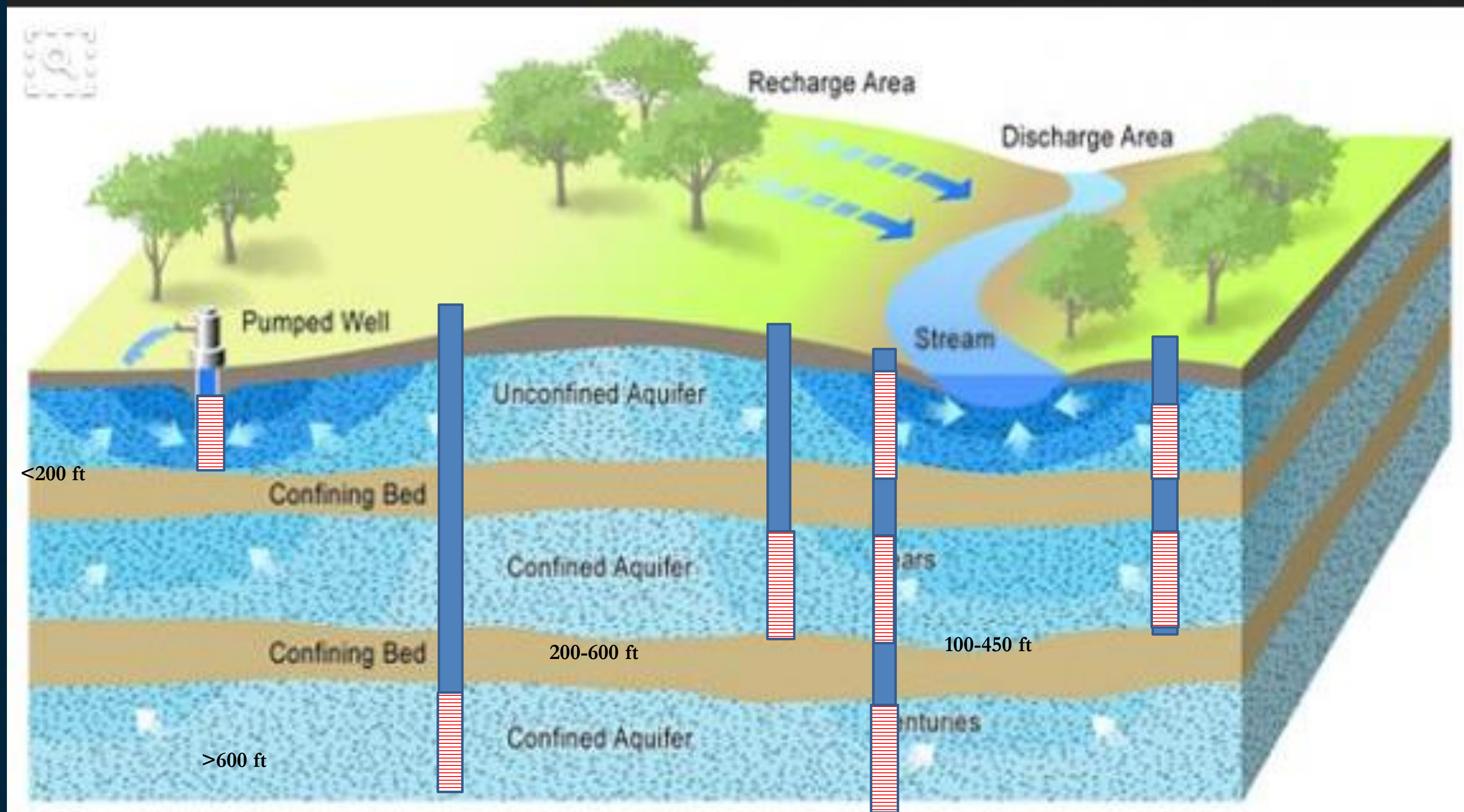


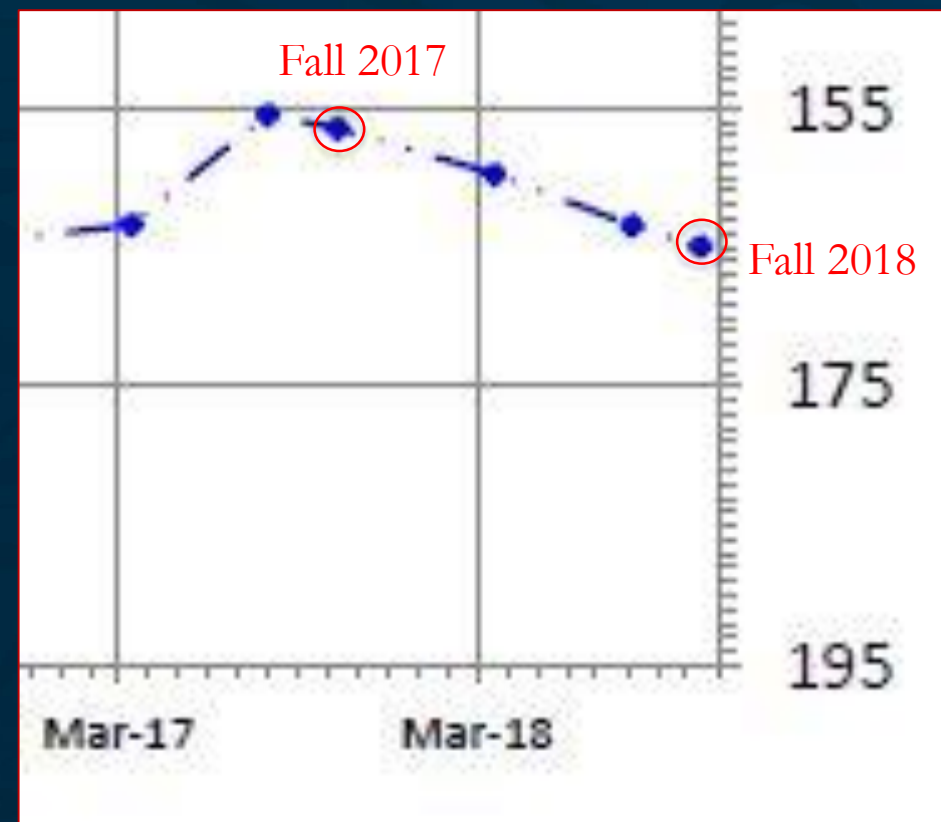
Sacramento Valley Groundwater Monitoring and Groundwater Elevation Maps

- **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

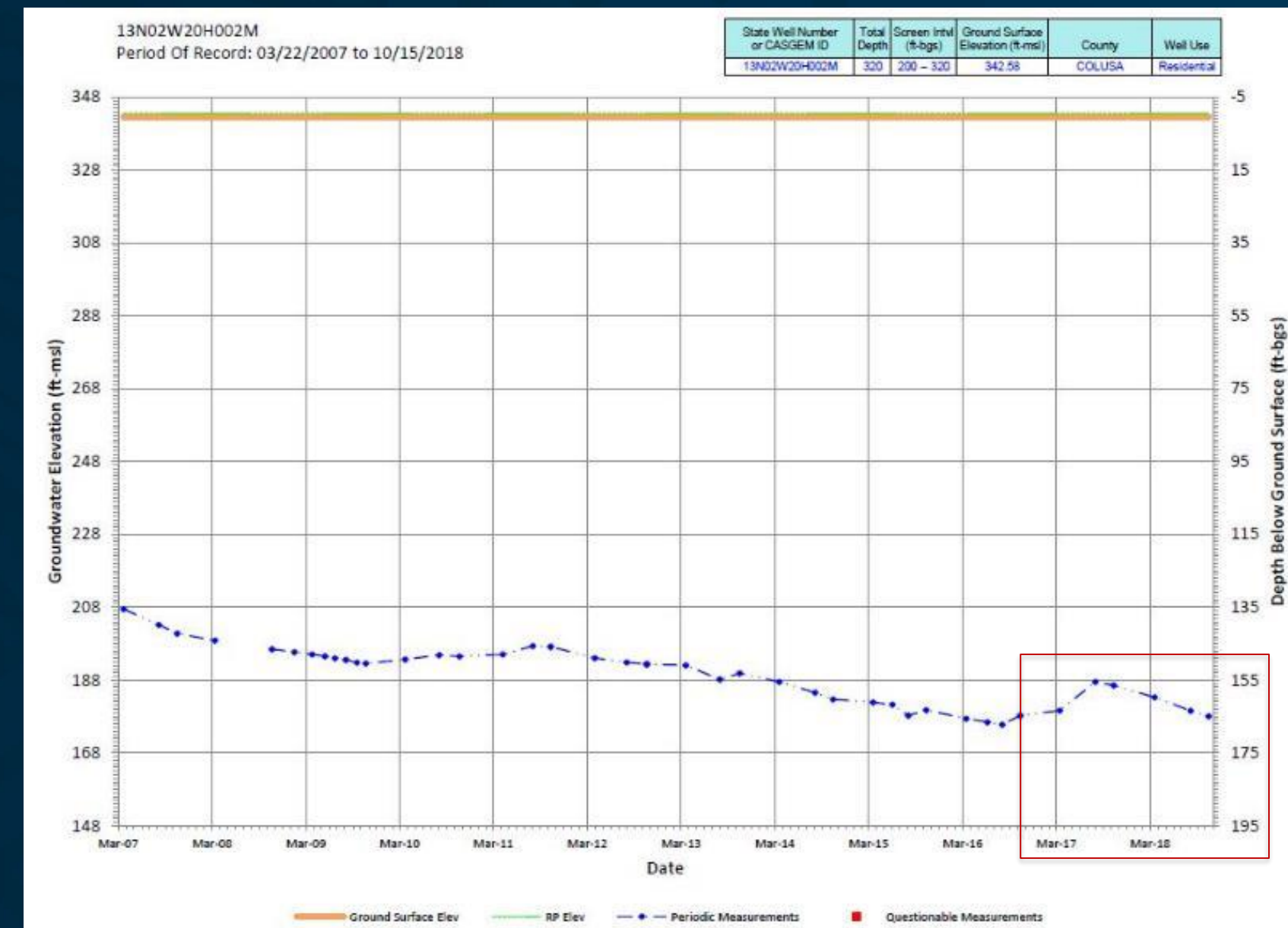




Groundwater Elevation Change Maps

Fall 2017-2018

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



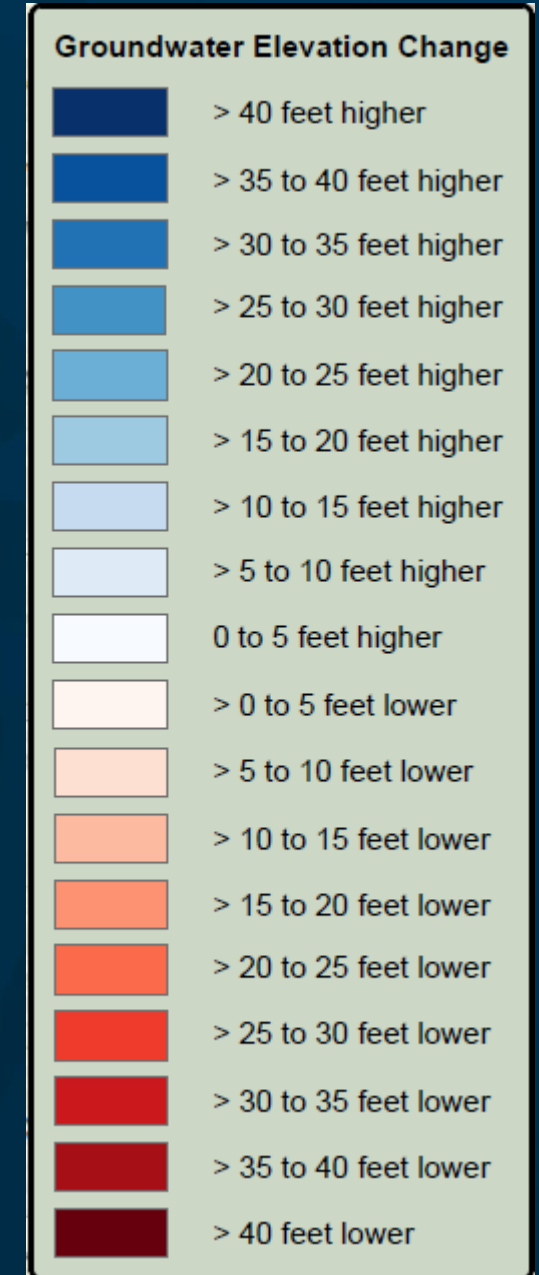
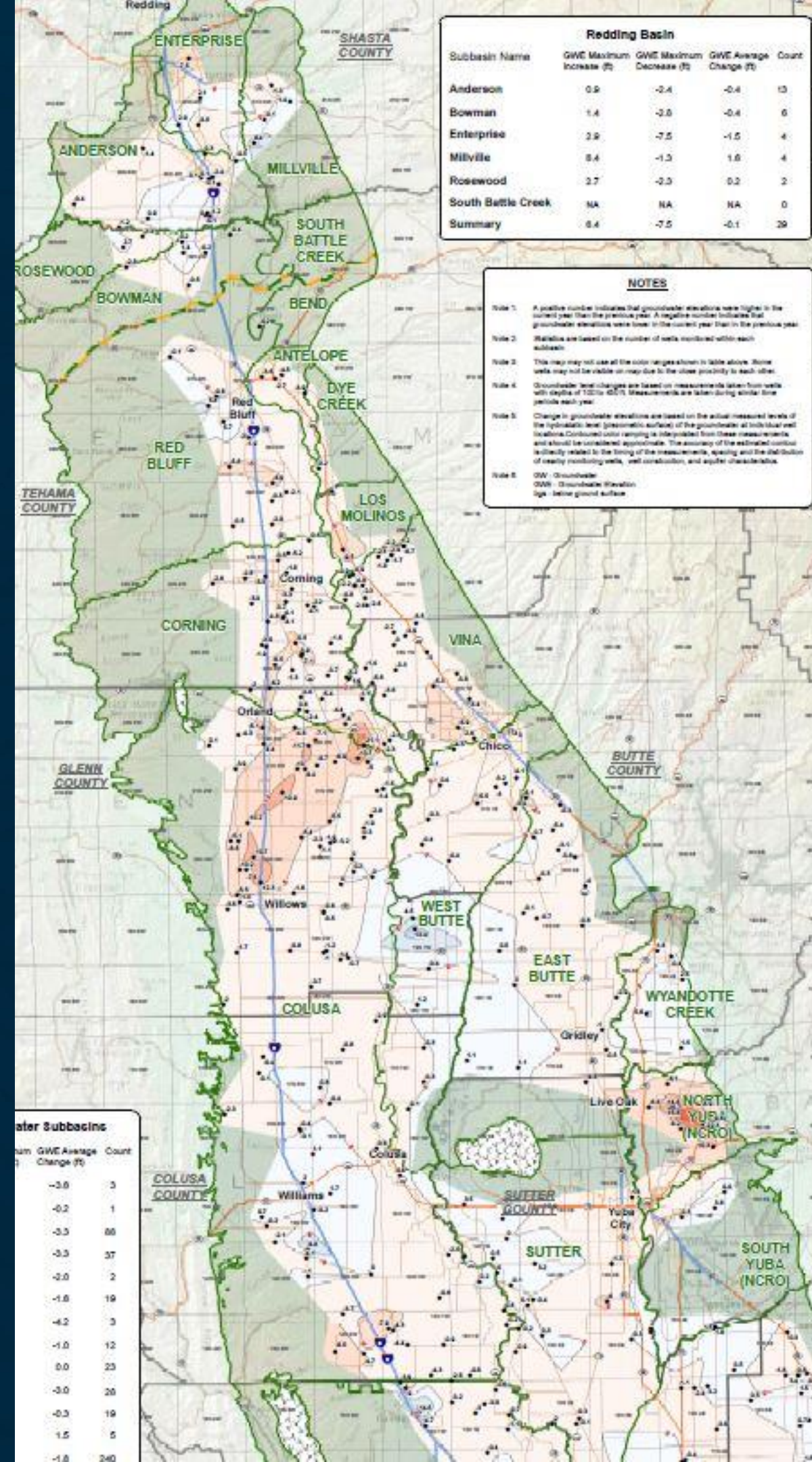
Groundwater Elevation Change Map

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.



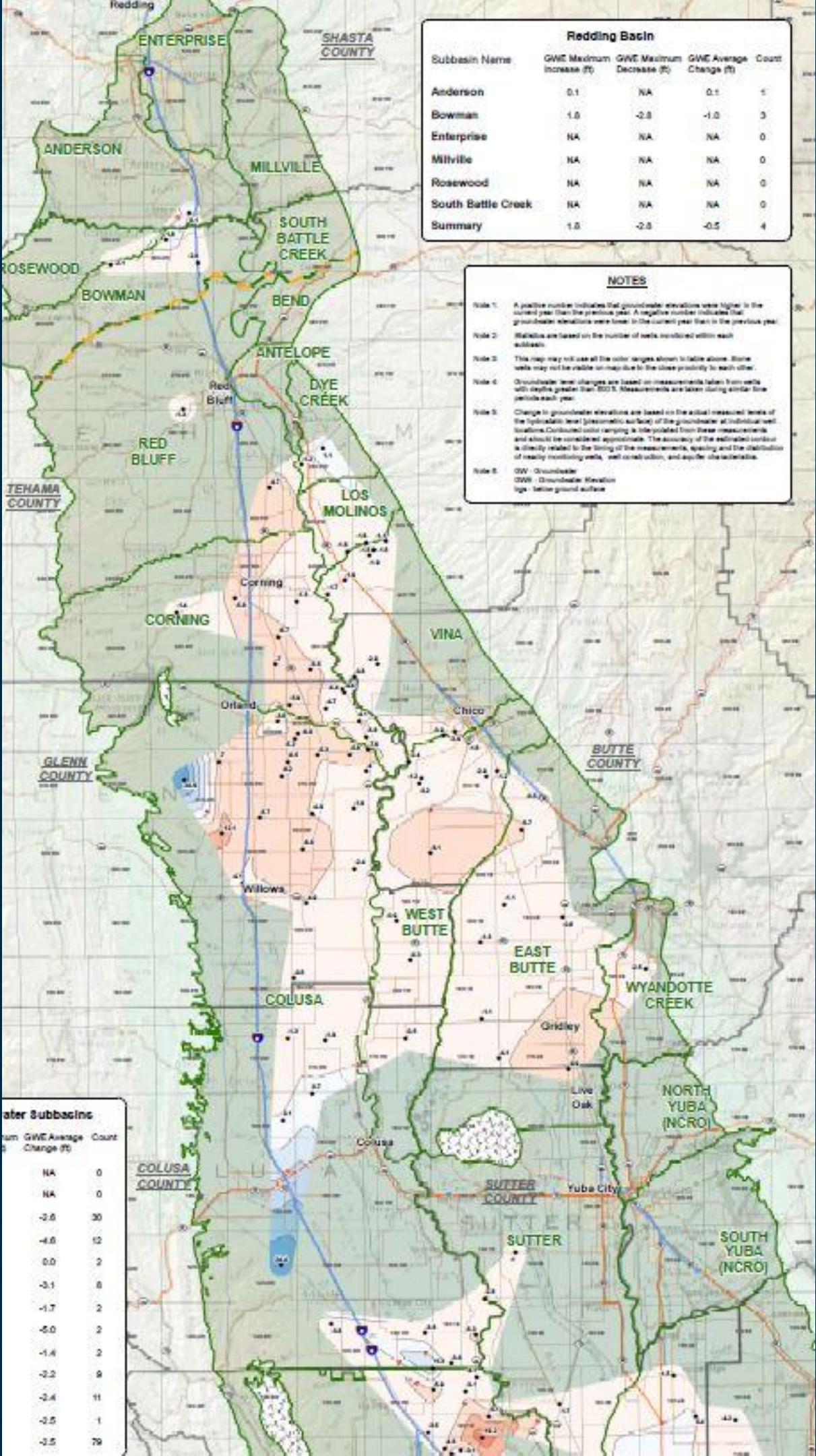
Groundwater Elevation Change Map

Fall 2017 to 2018

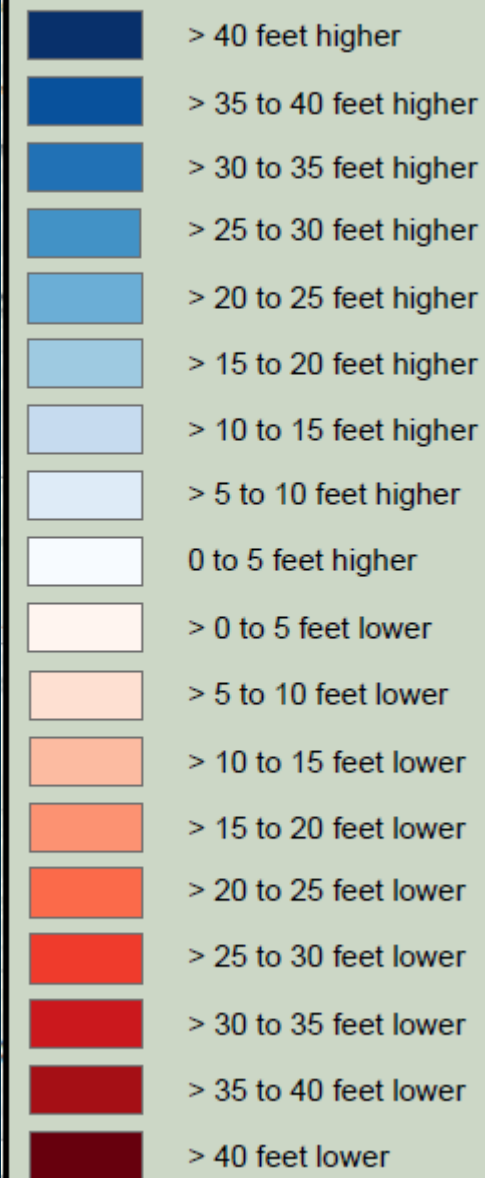
Well Depths:
> 600 feet
below ground surface

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





Groundwater Elevation Change Maps

Fall 2011-2018

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



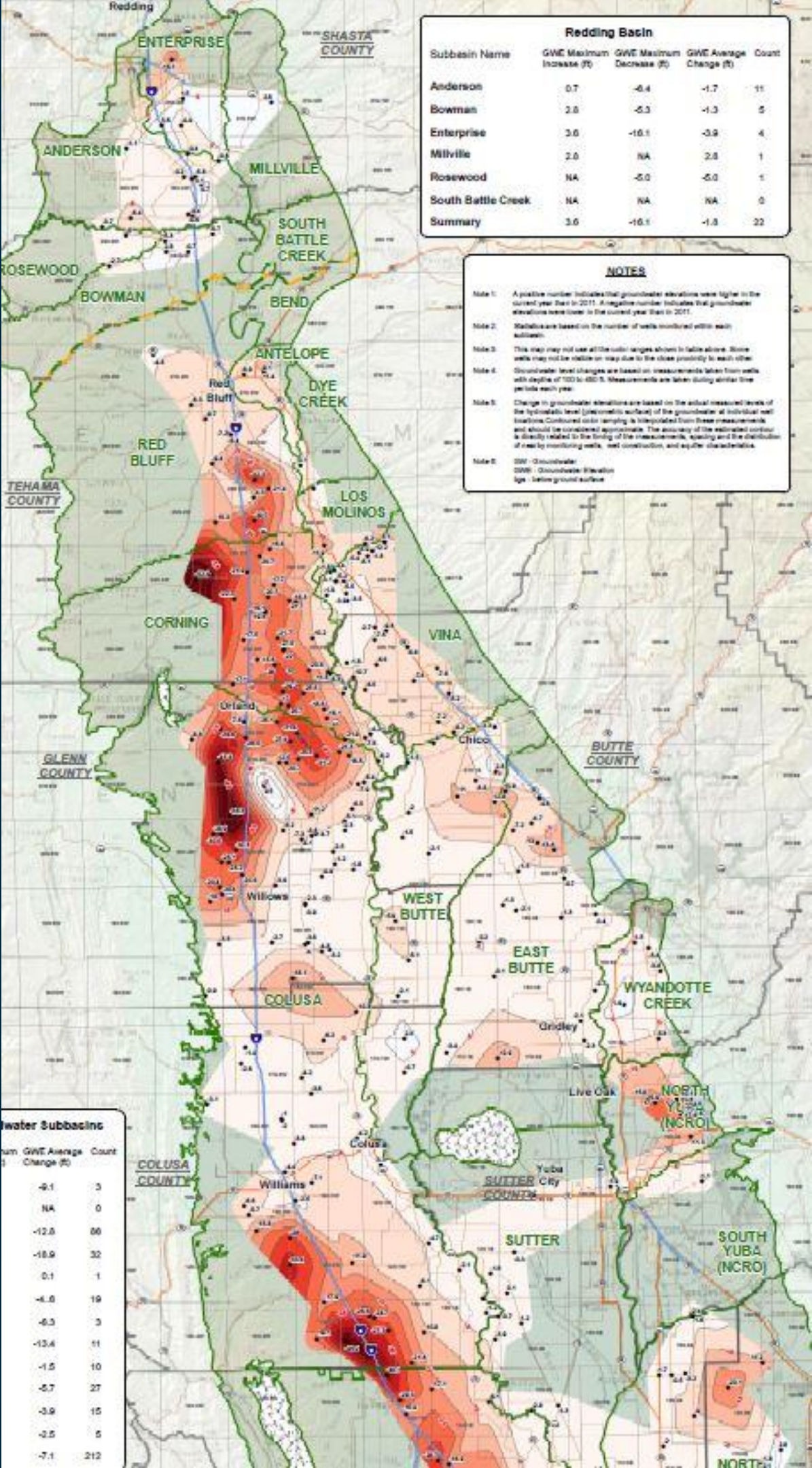
Groundwater Elevation Change Map

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.



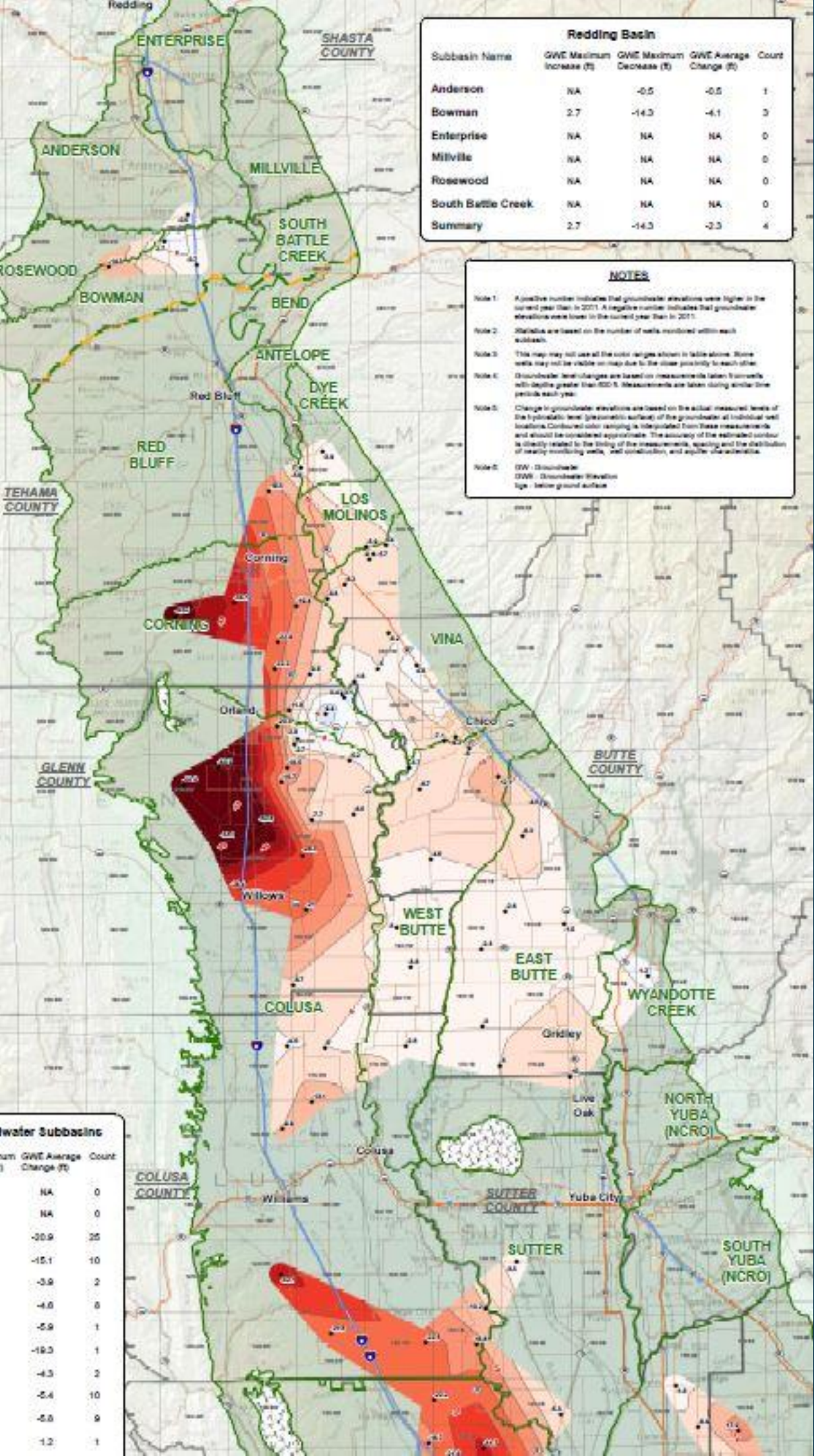
Groundwater Elevation Change Map

Summer 2011 to 2018

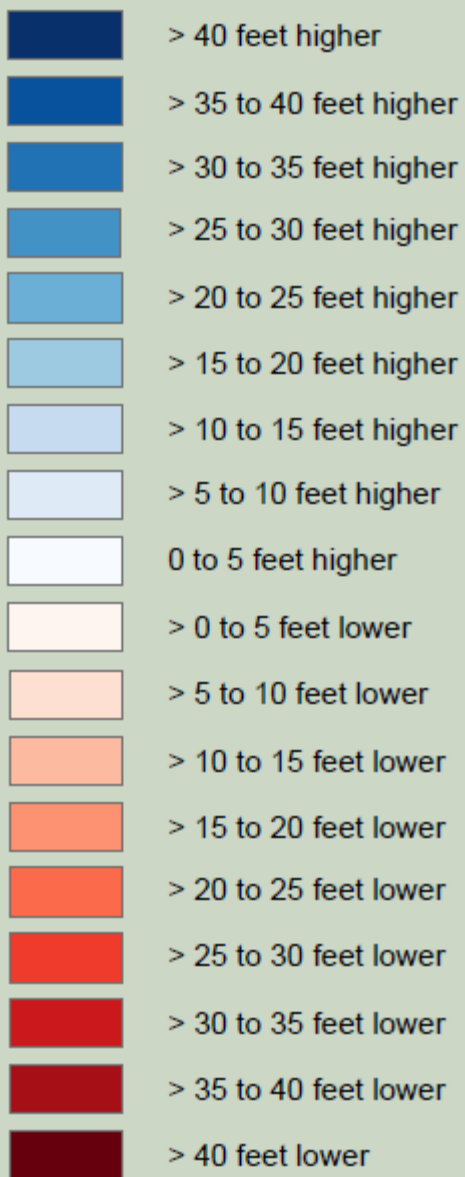
Well Depths:
> 600 feet
below ground surface

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





Groundwater Elevation Change Maps

Fall 2004-2018

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



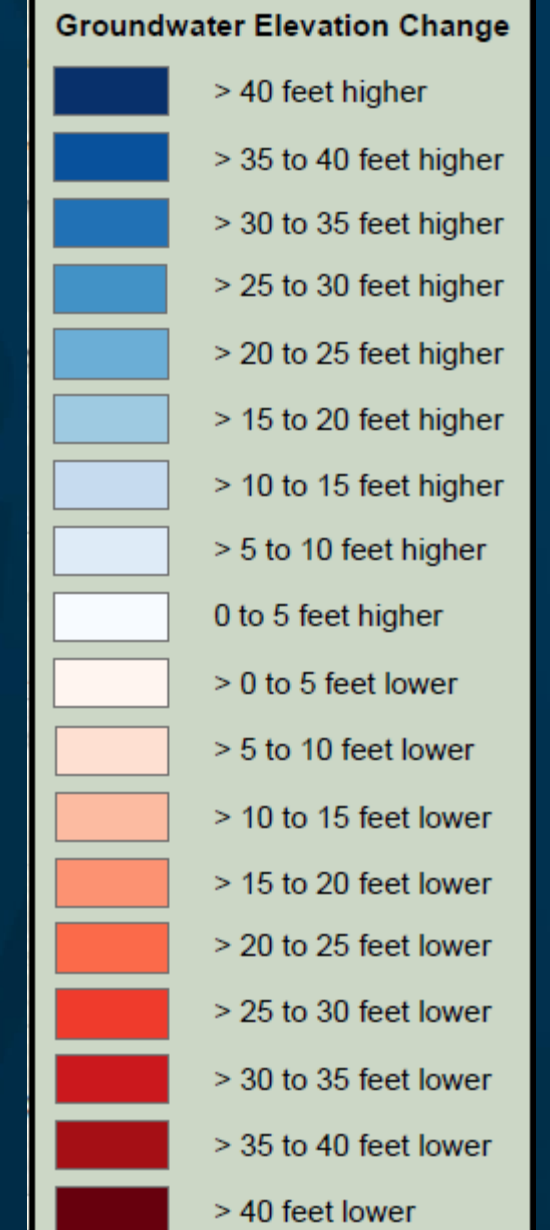
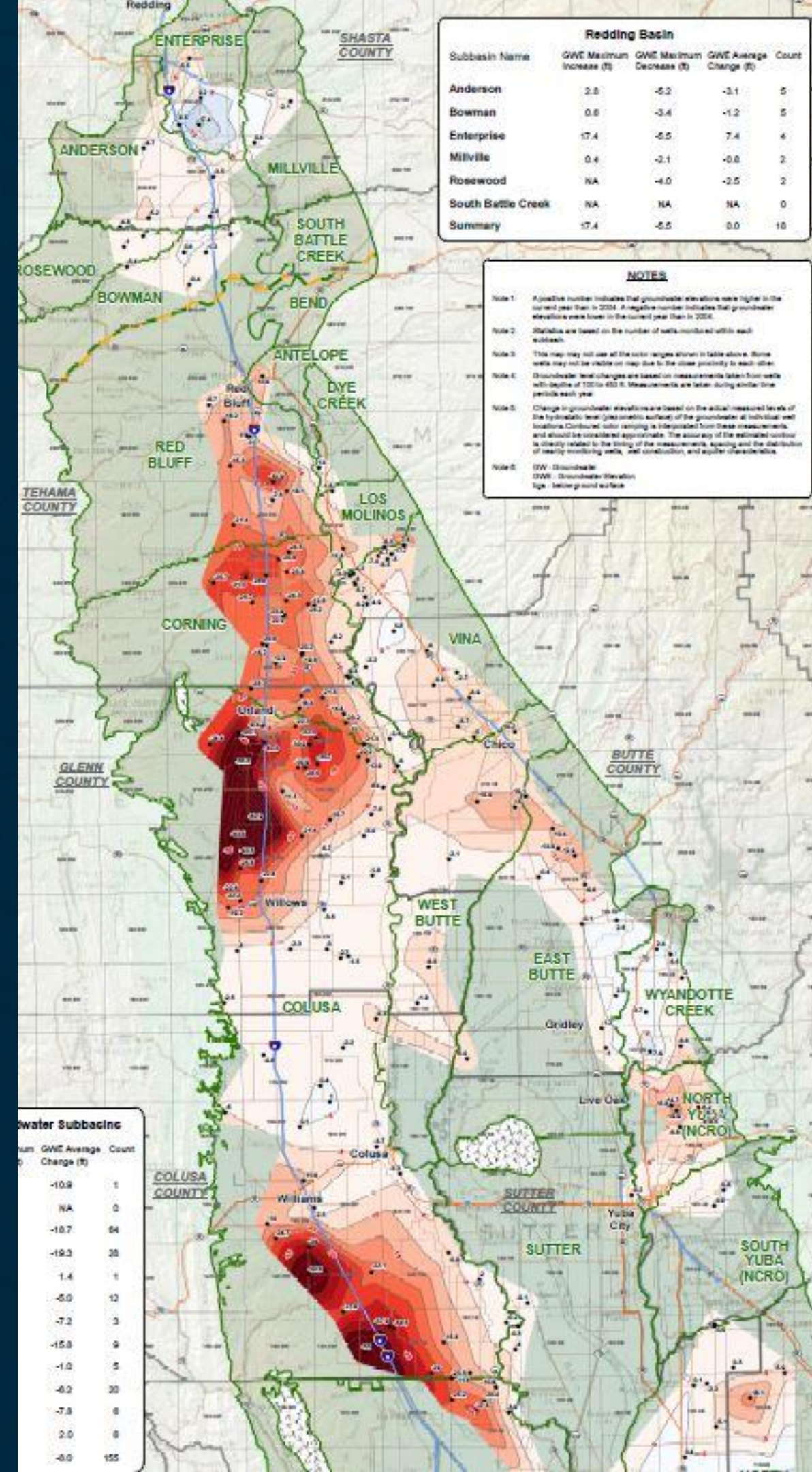
Groundwater Elevation Change Map

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.



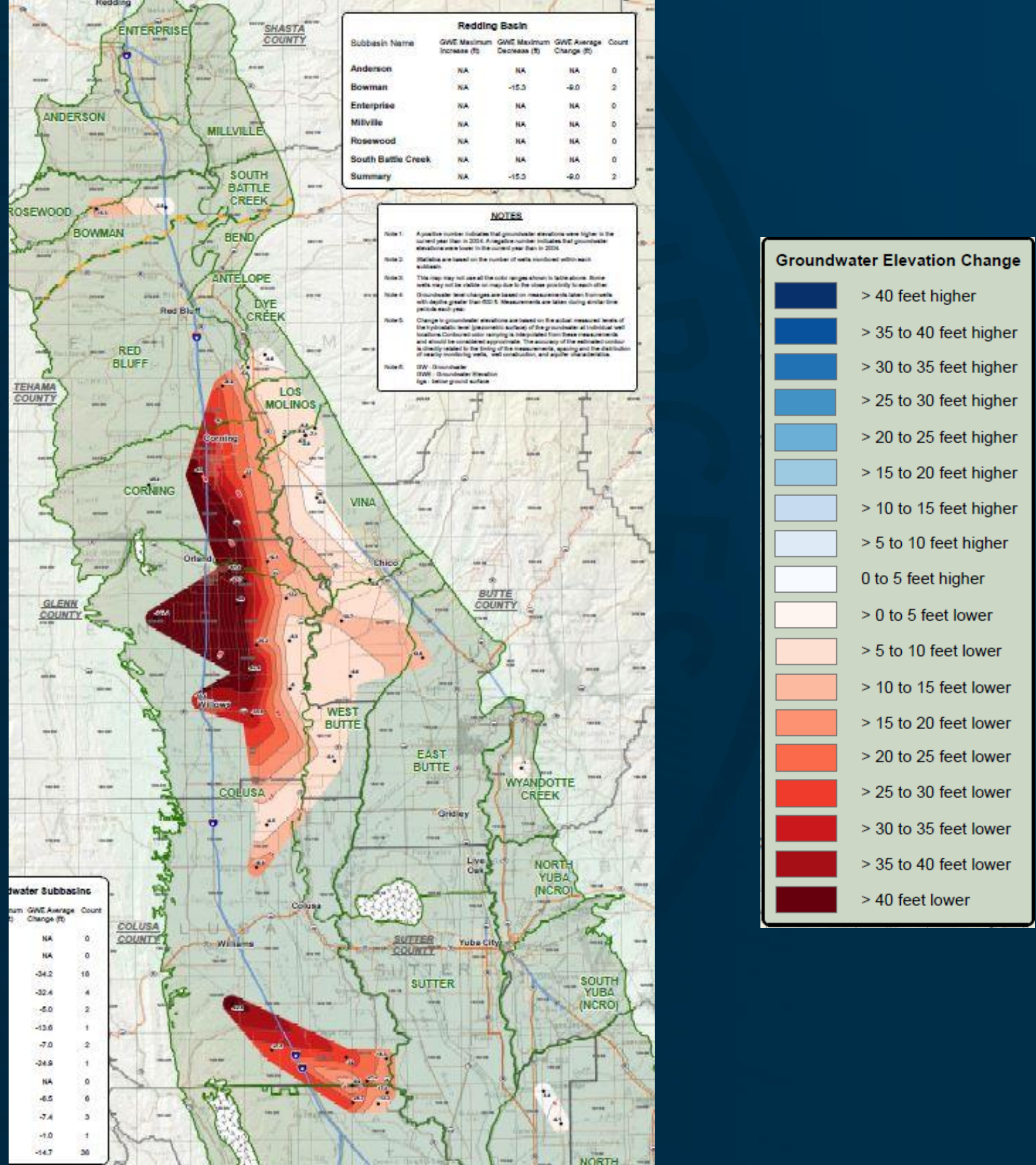
Groundwater Elevation Change Map

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 displays the California Open Data Portal interface. The browser address bar shows the URL: <https://data.ca.gov/dataset/northern-sacramento-valley-groundwater-elevation-change-maps>. The portal header includes the 'CA.GOV OPEN DATA PORTAL' logo and a search bar. A navigation bar contains links for Datasets, Topics, Groups, About, State Portals, Civic Engagement, and Documentation, along with a 'Log in' button. The breadcrumb trail indicates the path: Home / Datasets / Northern Sacramento Valley Groundwater Elevation Change Maps. Below the breadcrumb, there are buttons for 'View published' and 'Revisions'. The main content area features the California Department of Water Resources logo and a description of the department's role. To the right, the dataset title 'Northern Sacramento Valley Groundwater Elevation Change Maps' is displayed, followed by tags for 'Natural Resources' and 'Water'. A detailed description explains that these maps summarize groundwater level measurements over time, collected from wells in the northern Sacramento Valley. It mentions that the data is collected seasonally by the Department of Water Resources (DWR) Northern Region Office (NRO) and monitoring cooperators. The data includes seasonal fluctuations and long-term trends over time, covering the Sacramento Valley and Redding groundwater basin portions of Shasta, Tehama, Butte, Colusa, Glenn, and Sutter counties. A section titled 'To lookup and filter documents' provides a link to the 'NSV GW Change Map Index' for filtering and sorting. The 'Source' is listed as 'CNRA DWR'. Under the 'Data and Resources' section, three items are listed: 'NSV GW Change Map Index' (with CSV and Download buttons), 'Fall 2018 NRO GW Elevation Change Map 100 to 450 Ft Wells 2017 to 2018' (with a Download button), and 'Fall 2018 NRO GW Elevation Change Map Shallow Wells 2017 to 2018' (with a Download button). On the left side, there is a 'License' section stating 'License not specified' and an 'Other Access' section providing links for JSON, RDF, and the DKAN API.

gov

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Home / Datasets / Northern Sacramento Valley Groundwater Elevation Change Maps

View published Revisions

 California Department of Water Resources

The Department of Water Resources (DWR) is responsible for managing and protecting California's water resources. DWR works with other agencies to benefit the State's people and to protect, restore and enhance the natural and human environments.

Northern Sacramento Valley Groundwater Elevation Change Maps




Natural Resources Water



Groundwater Elevation Change Maps summarize the change in groundwater level measurements over time, collected from wells in the northern Sacramento Valley by the Department of Water Resources (DWR) Northern Region Office (NRO) and monitoring cooperators. Northern Sacramento Valley groundwater levels are measured seasonally, during the annual water year, as part of our ongoing data collection program. Many of the wells have over 30 years of monitoring history, with the longest active monitoring well dating back to 1921. Groundwater level data provides valuable information regarding seasonal fluctuations and long-term changes in groundwater level trends over time. The groundwater level data presented in these figures includes the Sacramento Valley and Redding groundwater basin portions of Shasta, Tehama, Butte, Colusa, Glenn, and Sutter counties and are organized by year, season, well depth, and period of change.



To lookup and filter documents by order of year, season, or depth interval, the **NSV GW Change Map Index** provides filtering and sorting to locate specific map figures: <https://data.cnra.ca.gov/dataset/northern-sacramento-valley-groundwater-...>

Source: CNRA DWR

Data and Resources

 NSV GW Change Map Index  

 Fall 2018 NRO GW Elevation Change Map 100 to 450 Ft Wells 2017 to 2018 



 Fall 2018 NRO GW Elevation Change Map Shallow Wells 2017 to 2018 

License

License not specified

Other Access

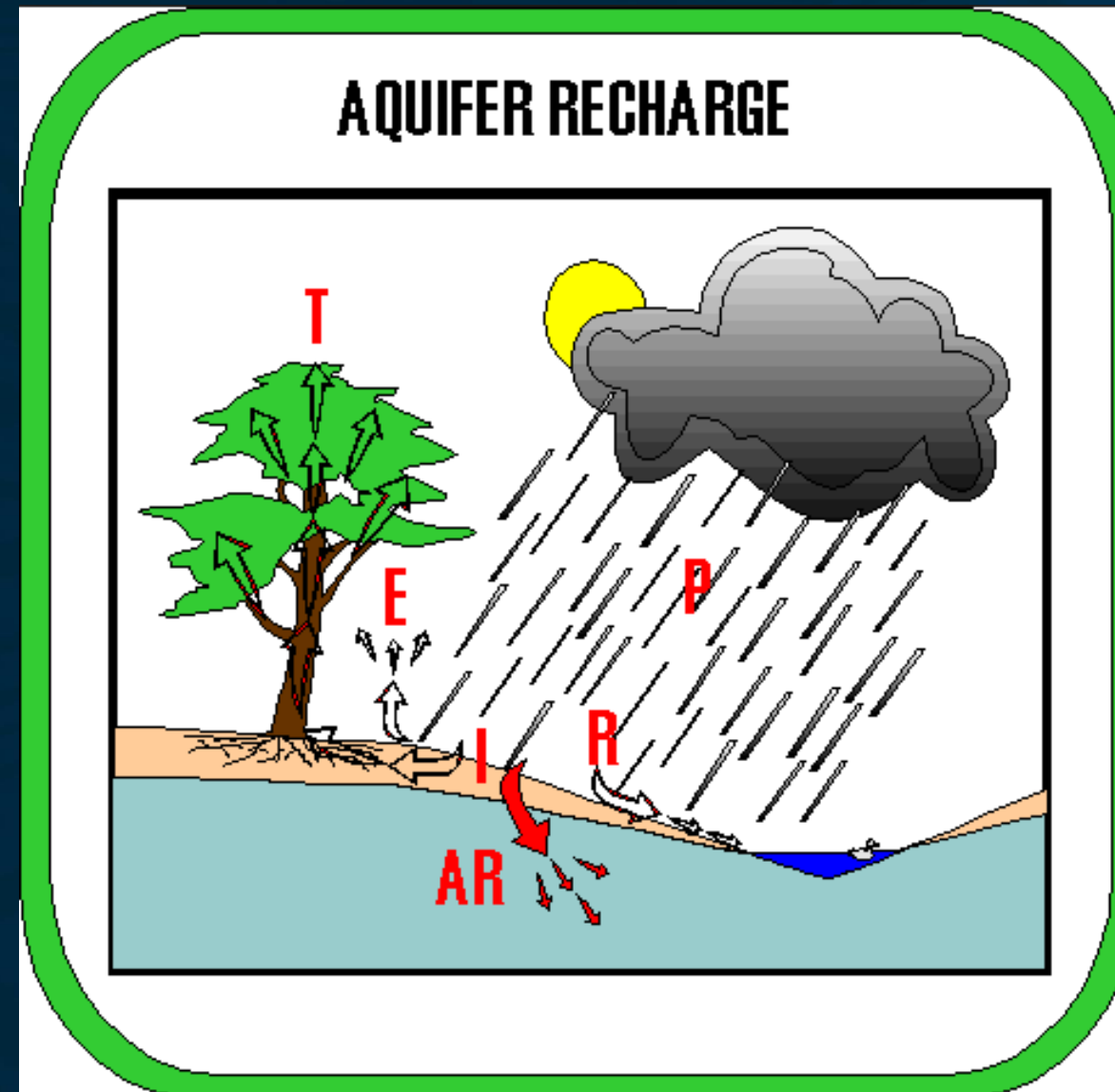
The information on this page (the dataset metadata) is also available in these formats.

 JSON  RDF

via the DKAN API

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

Spring 2019 Groundwater Change Maps Coming Soon.



Questions? Comments?
Thank You