

Glenn County

Groundwater Conditions Update Fall 2014



Erin Smith, Engineering Geologist
CA Department of Water Resources
February 10, 2015

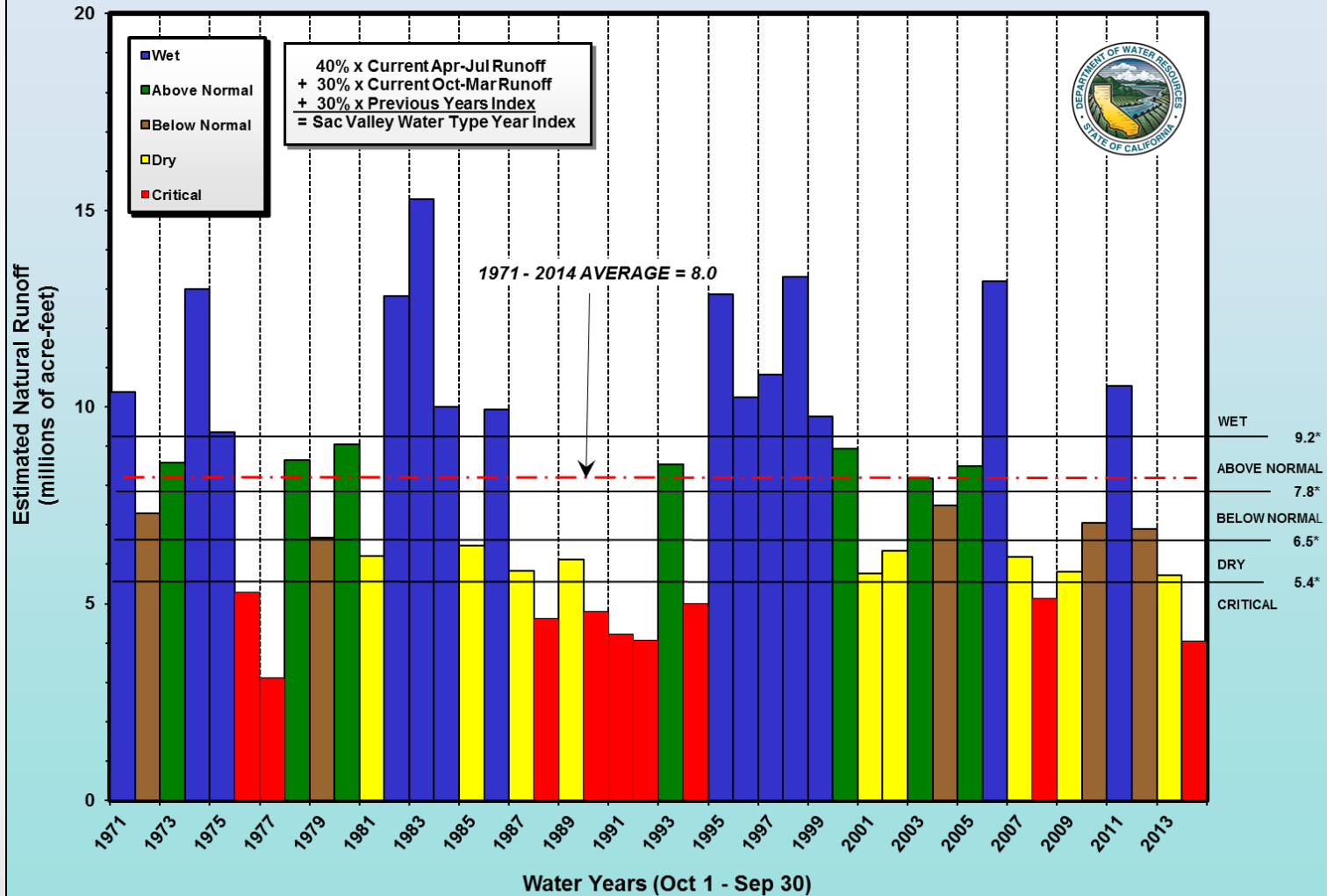


Outline

- Precipitation and runoff
- Groundwater Conditions
 - Online Resources

Water Year Index 1971-2014

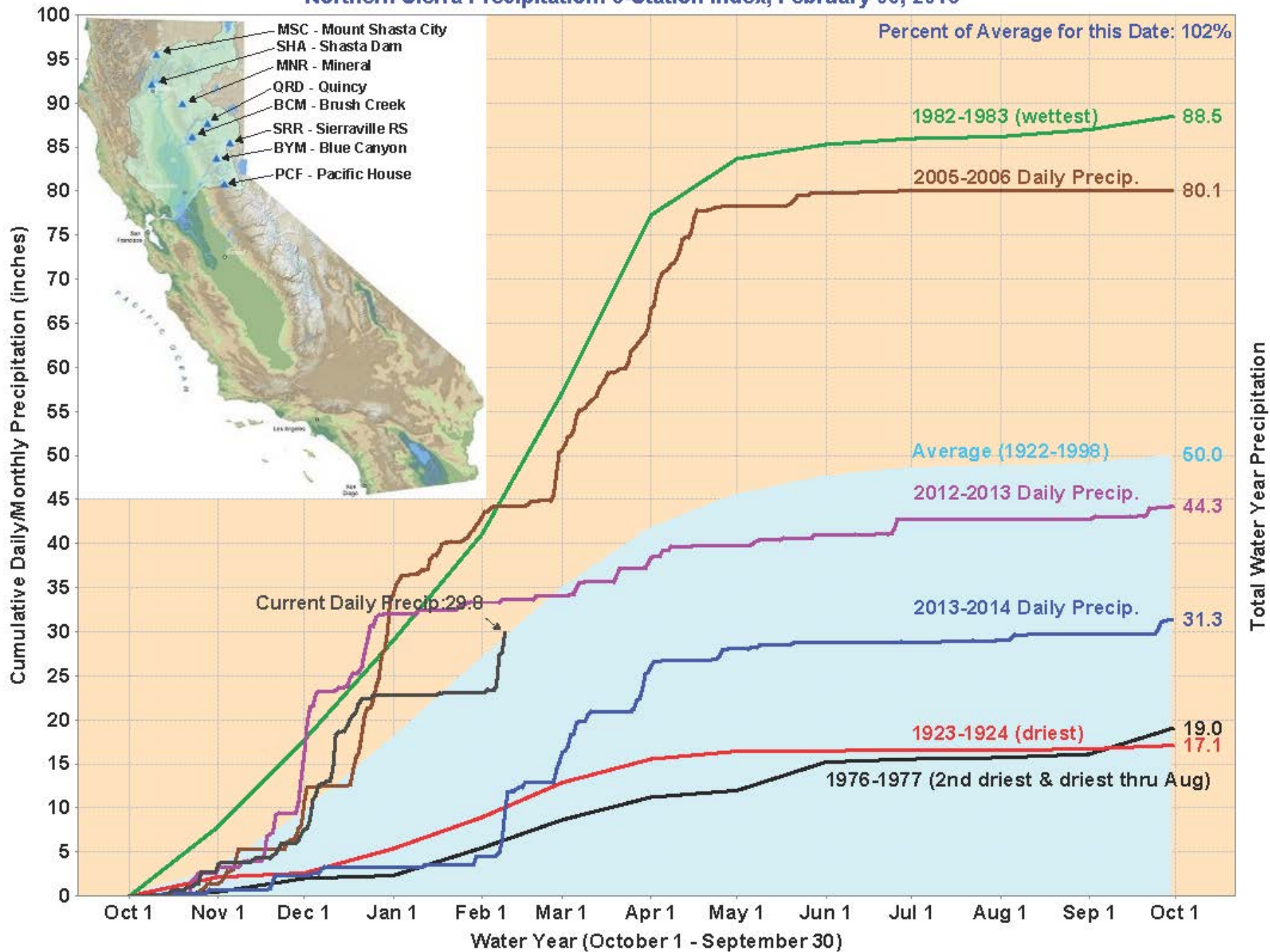
SACRAMENTO VALLEY WATER YEAR TYPE INDEX
1971-2014



Source: California Department of Water Resources

* Index based on flow in the million acre-feet

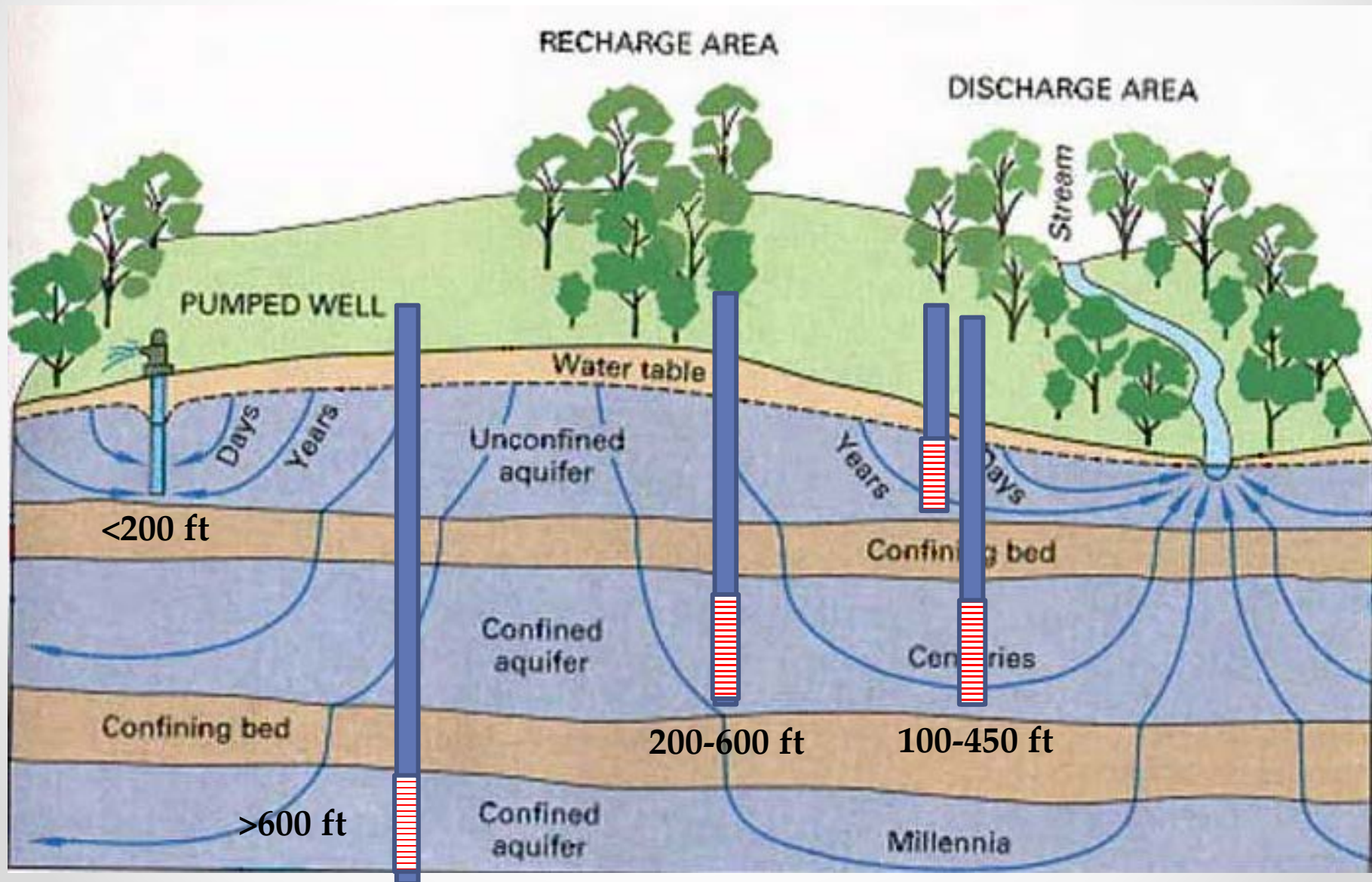
Northern Sierra Precipitation: 8-Station Index, February 09, 2015



Groundwater Monitoring and Groundwater Elevation Change Maps



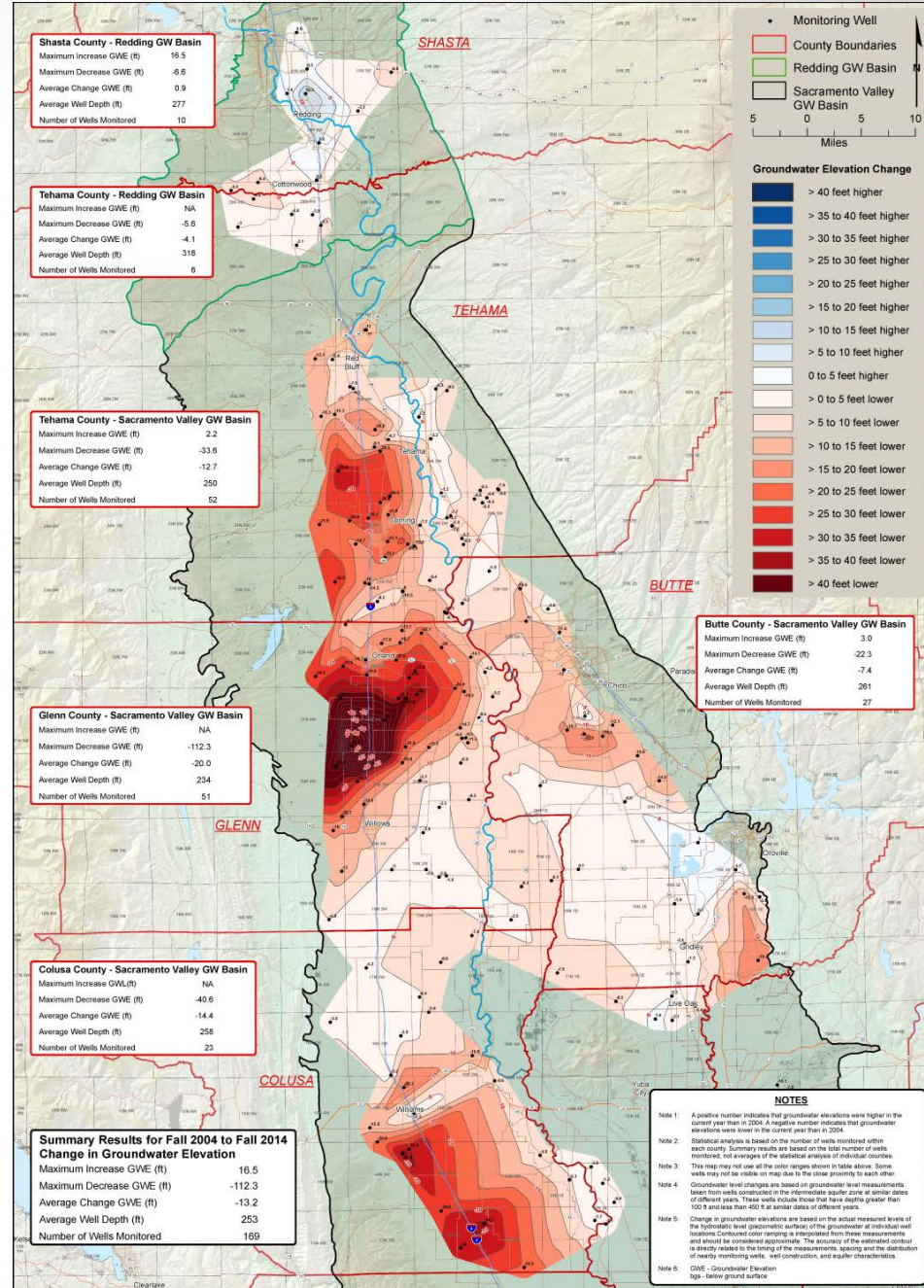
Groundwater level data are then grouped for analysis by well depth



Groundwater Elevation Change Map

Fall 2004 to 2014

well depth:
100 to 450 feet
below ground surface



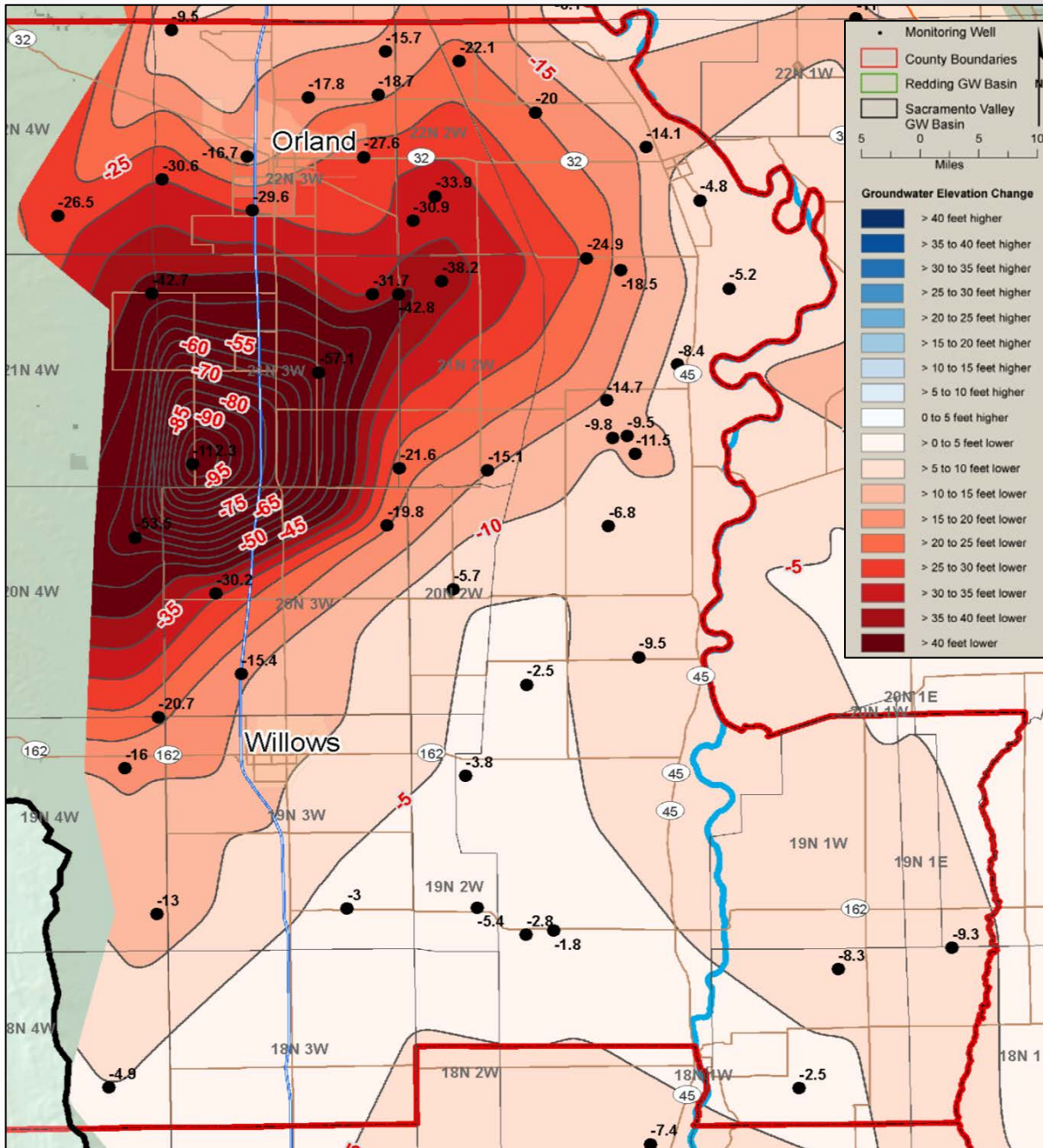
Summary Results for Fall 2004 to Fall 2014 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	16.5
Maximum Decrease GWE (ft)	-112.3
Average Change GWE (ft)	-13.2
Average Well Depth (ft)	253
Number of Wells Monitored	169

Groundwater Elevation Change Map

Fall 2004 to 2014

well depth:
100 to 450 feet
below ground surface

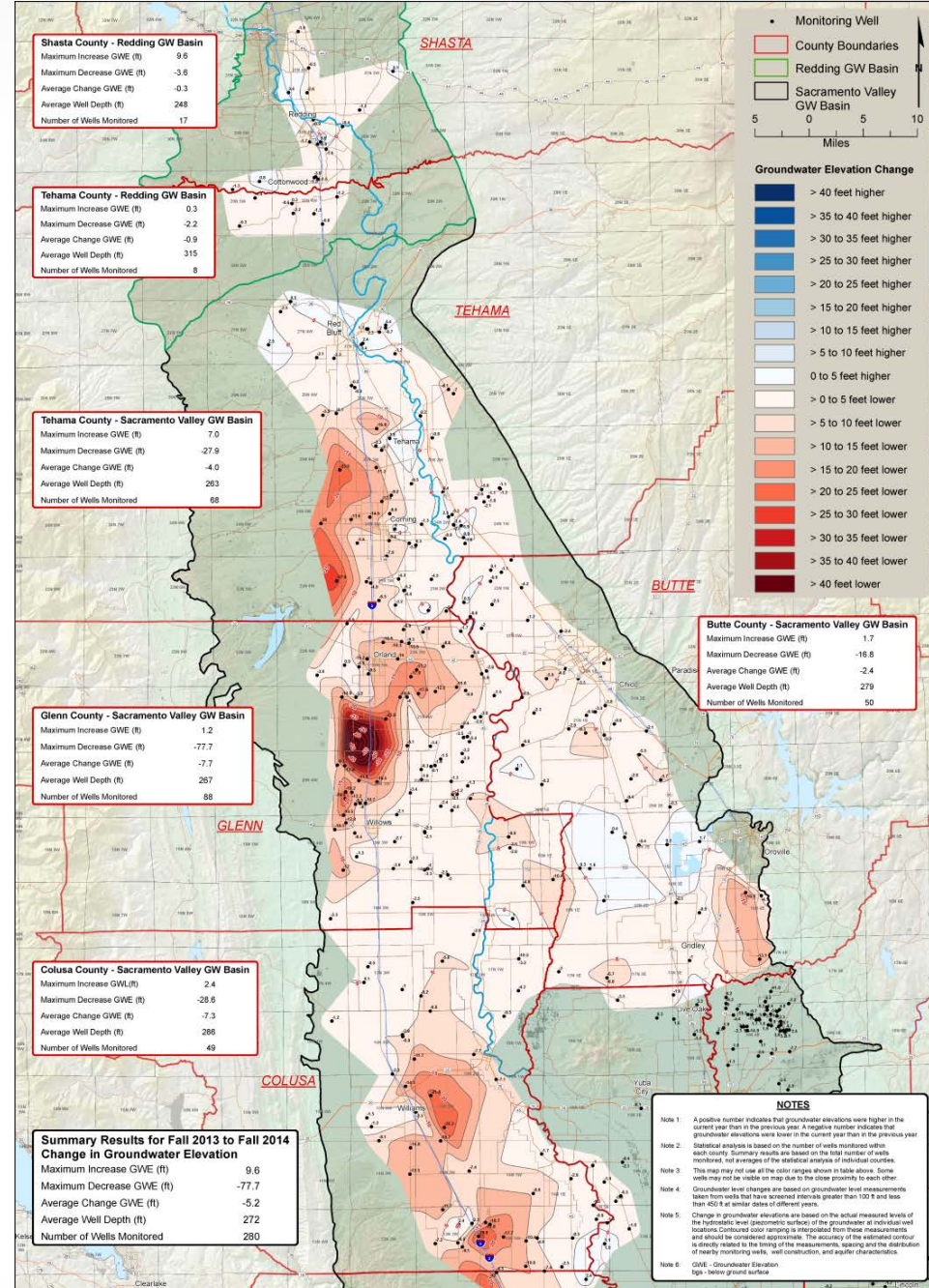
Glenn County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-112.3
Average Change GWE (ft)	-20.0
Average Well Depth (ft)	234
Number of Wells Monitored	51



Groundwater Elevation Change Map

Fall 2013 to 2014

well depth:
100 to 450 feet
below ground surface



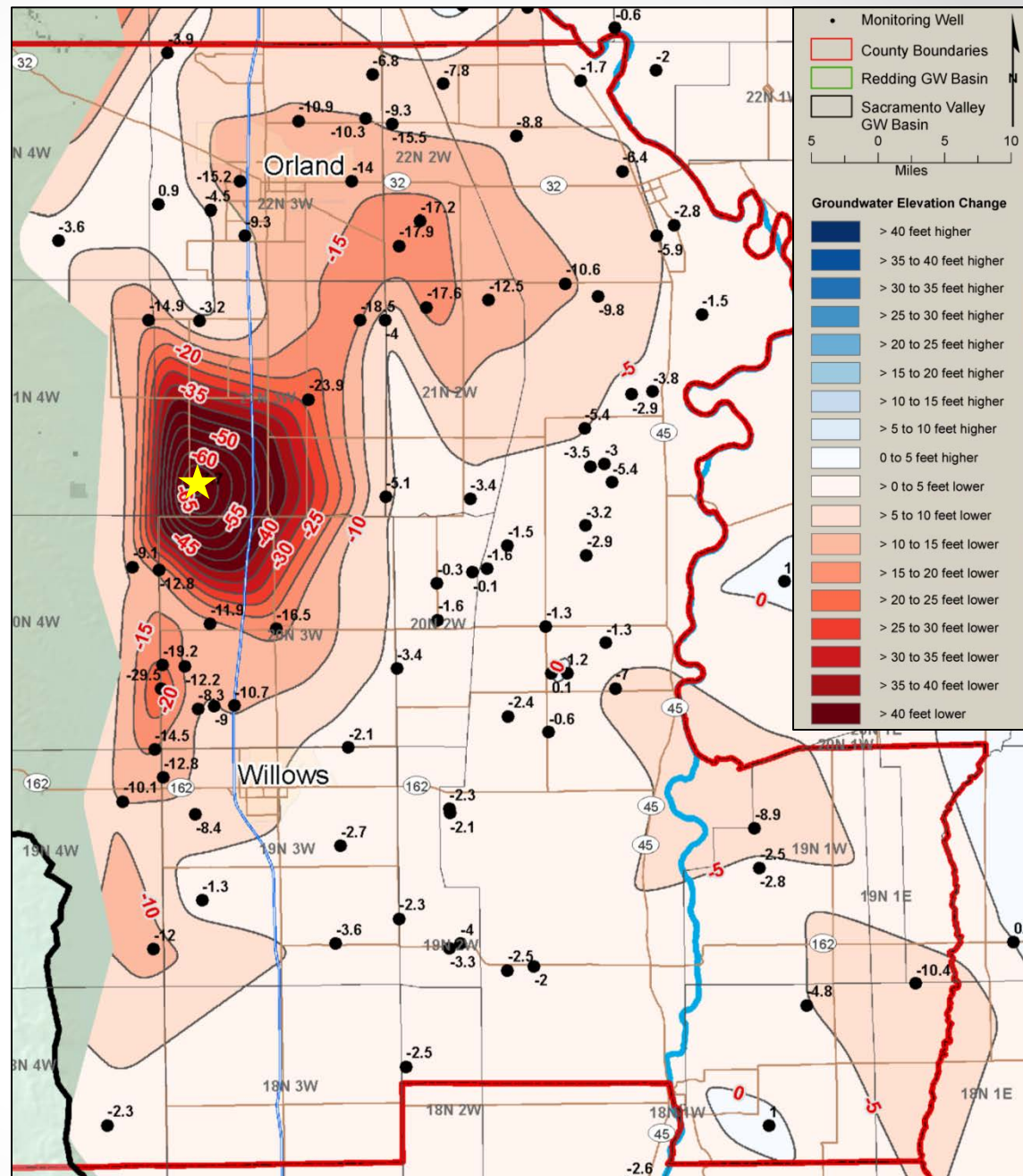
Summary Results for Fall 2013 to Fall 2014 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	9.6
Maximum Decrease GWE (ft)	-77.7
Average Change GWE (ft)	-5.2
Average Well Depth (ft)	272
Number of Wells Monitored	280

Groundwater Elevation Change Map

Fall 2013 to 2014

well depth:
100 to 450 feet
below ground surface

Glenn County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	1.2
Maximum Decrease GWE (ft)	-77.7
Average Change GWE (ft)	-7.7
Average Well Depth (ft)	267
Number of Wells Monitored	88



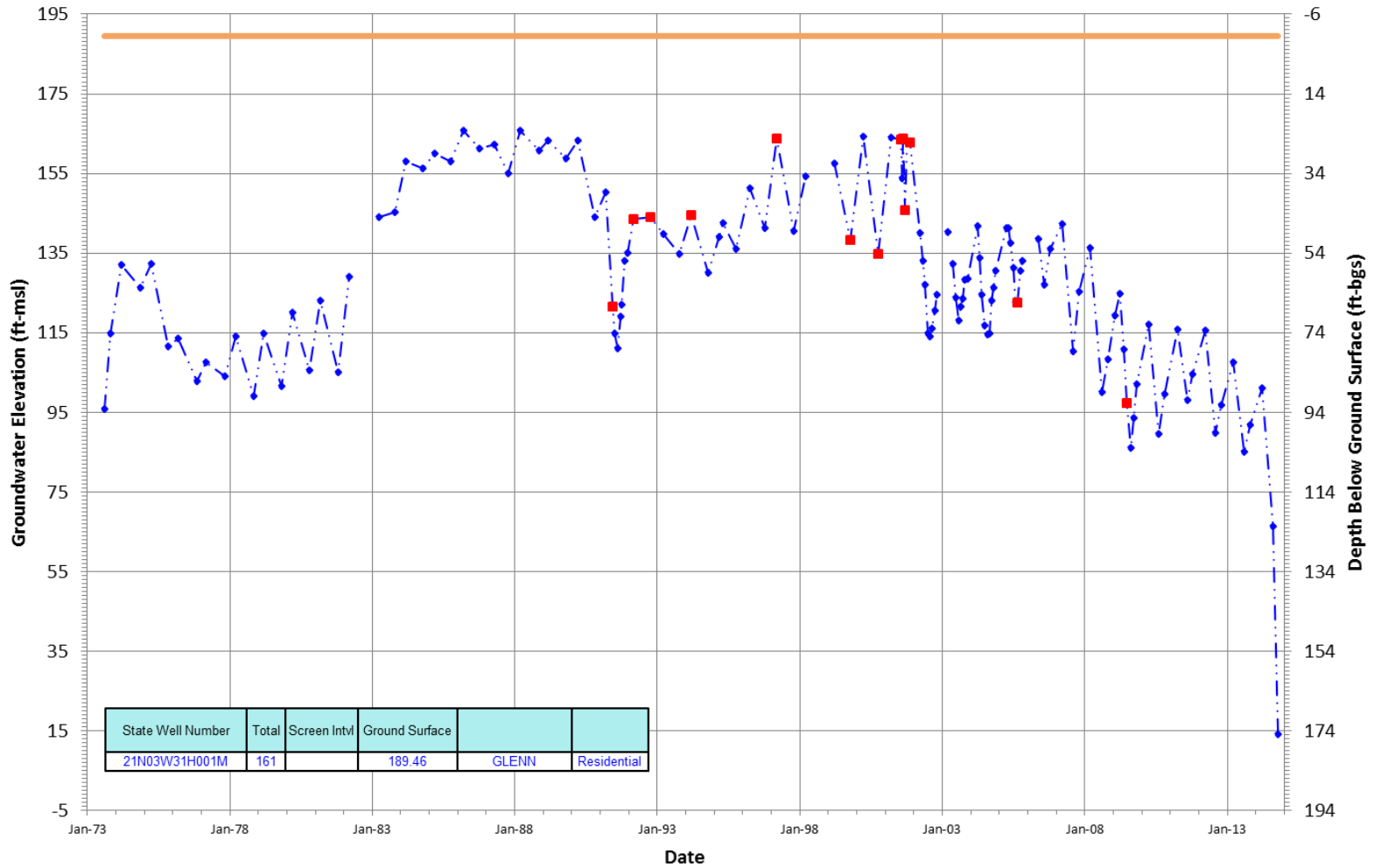
Groundwater Elevation Hydrograph

21N03W31H001M

Period Of Record: 08/10/1973 to 10/13/2014

Hydrograph Criteria

Field Book Name is 'Glenn County-Book 2'



— Ground Surface Elev
 —◆— Mean Daily Measurements
 —■— Periodic Measurements
 ■ Questionable Measurements

Groundwater Elevation Change Map

Fall 2004 to 2014

Deep:
greater than 600 feet
below ground surface

Glenn County - Sacramento Valley GW Basin

Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-79.7
Average Change GWE (ft)	-44.3
Average Well Depth (ft)	948
Number of Wells Monitored	8

Shasta County - Redding GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	NA
Average Change GWE (ft)	NA
Average Well Depth (ft)	NA
Number of Wells Monitored	NA

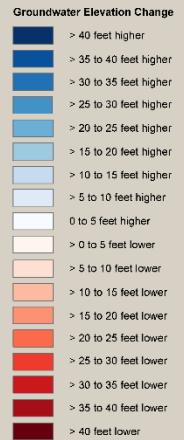
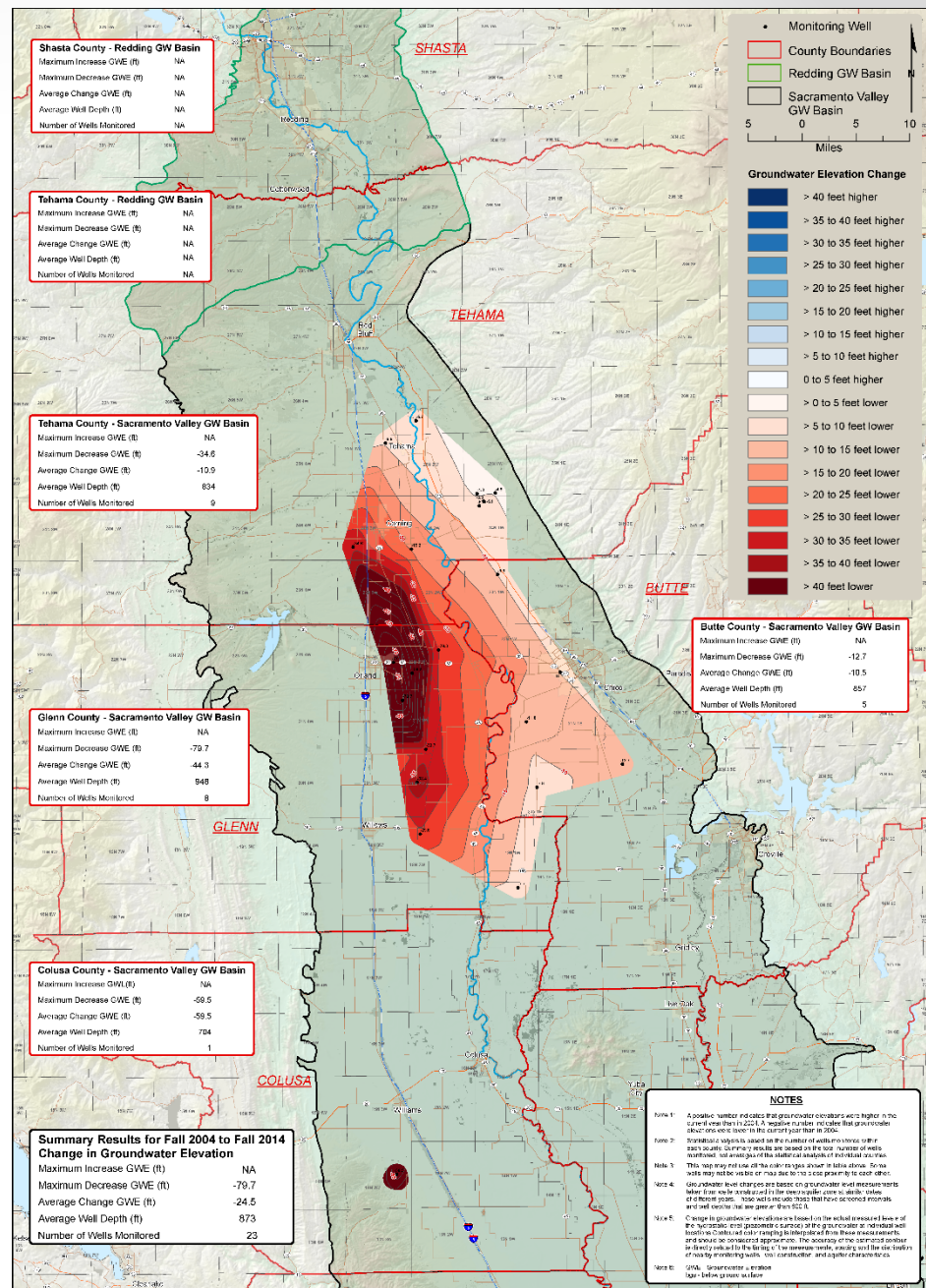
Tehama County - Redding GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	NA
Average Change GWE (ft)	NA
Average Well Depth (ft)	NA
Number of Wells Monitored	NA

Tehama County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-34.6
Average Change GWE (ft)	-10.9
Average Well Depth (ft)	634
Number of Wells Monitored	9

Glenn County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-79.7
Average Change GWE (ft)	-44.3
Average Well Depth (ft)	948
Number of Wells Monitored	8

Colusa County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-59.5
Average Change GWE (ft)	-59.5
Average Well Depth (ft)	704
Number of Wells Monitored	1

Summary Results for Fall 2004 to Fall 2014 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-79.7
Average Change GWE (ft)	-24.5
Average Well Depth (ft)	873
Number of Wells Monitored	23



Butte County - Sacramento Valley GW Basin	
Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-12.7
Average Change GWE (ft)	-10.5
Average Well Depth (ft)	657
Number of Wells Monitored	5

NOTES

Note 1: A positive number indicates that groundwater elevations are higher in the current time period (2014) relative to the earlier time period (2004).

Note 2: Increases or decreases in elevation are based on the number of wells monitored in each county. County or results are based on the total number of wells monitored. All elevations are based on the datum of 1988 mean sea level.

Note 3: This map may not use all of the data points shown in table above. Some wells may not be used in this map due to the fact that they are not active and well location level changes are based on groundwater level measurement taken from wells installed in the area (rather than in the table above).

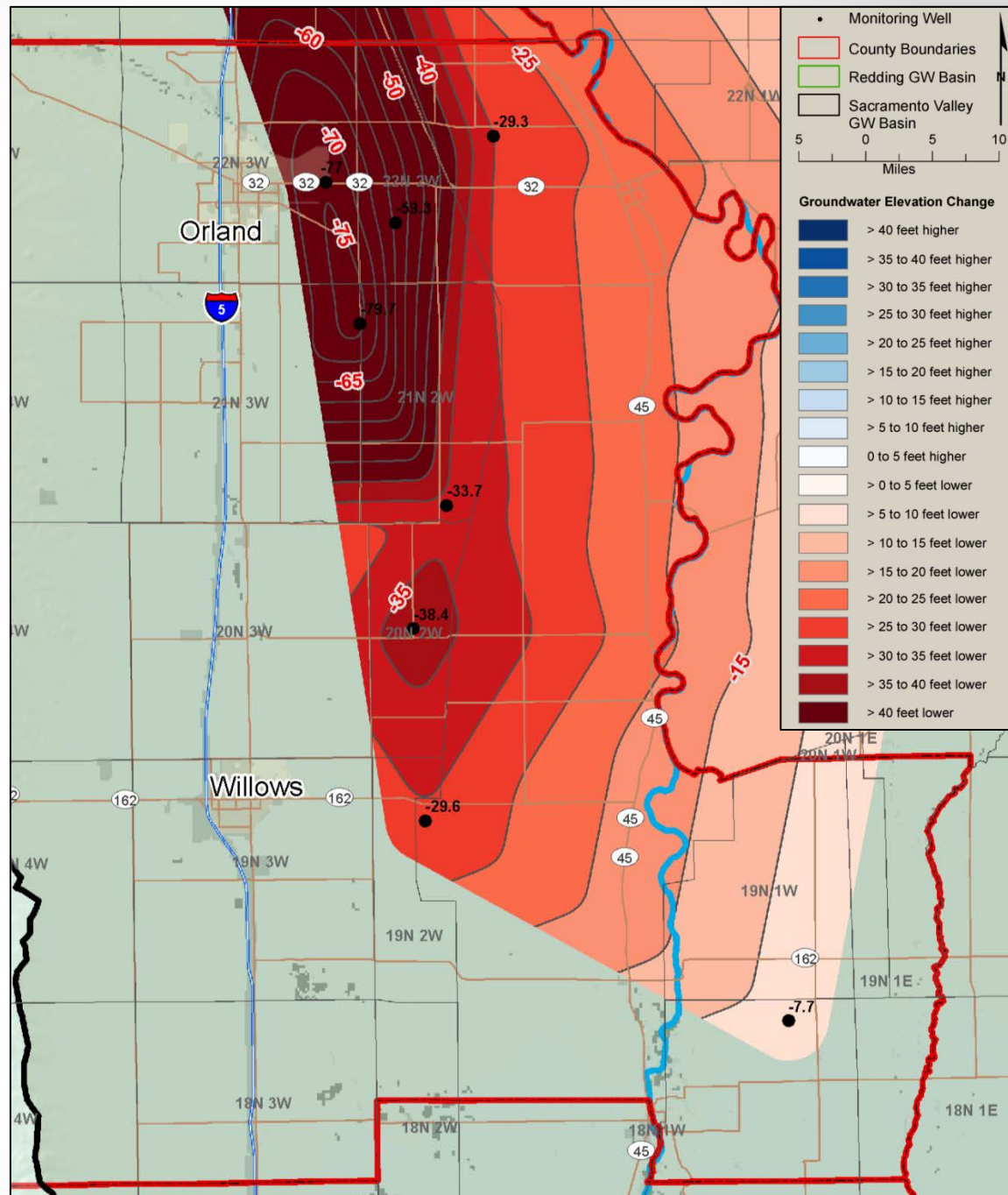
Note 4: Changes in groundwater elevation are based on the vertical increase or decrease of the water table (not the depth of the water table) at individual wells. The accuracy of the data is dependent on the accuracy of the data provided by the monitoring wells. The accuracy of the data is dependent on the accuracy of the monitoring wells. The accuracy of the data is dependent on the accuracy of the monitoring wells.

Note 5: Data source: Northern Sacramento Valley Groundwater Level Monitoring Data.

Groundwater Elevation Change Map

Fall 2004 to 2014

Deep:
greater than 600 feet
below ground surface



Glenn County - Sacramento Valley GW Basin

Maximum Increase GWE (ft)	NA
Maximum Decrease GWE (ft)	-79.7
Average Change GWE (ft)	-44.3
Average Well Depth (ft)	948
Number of Wells Monitored	8

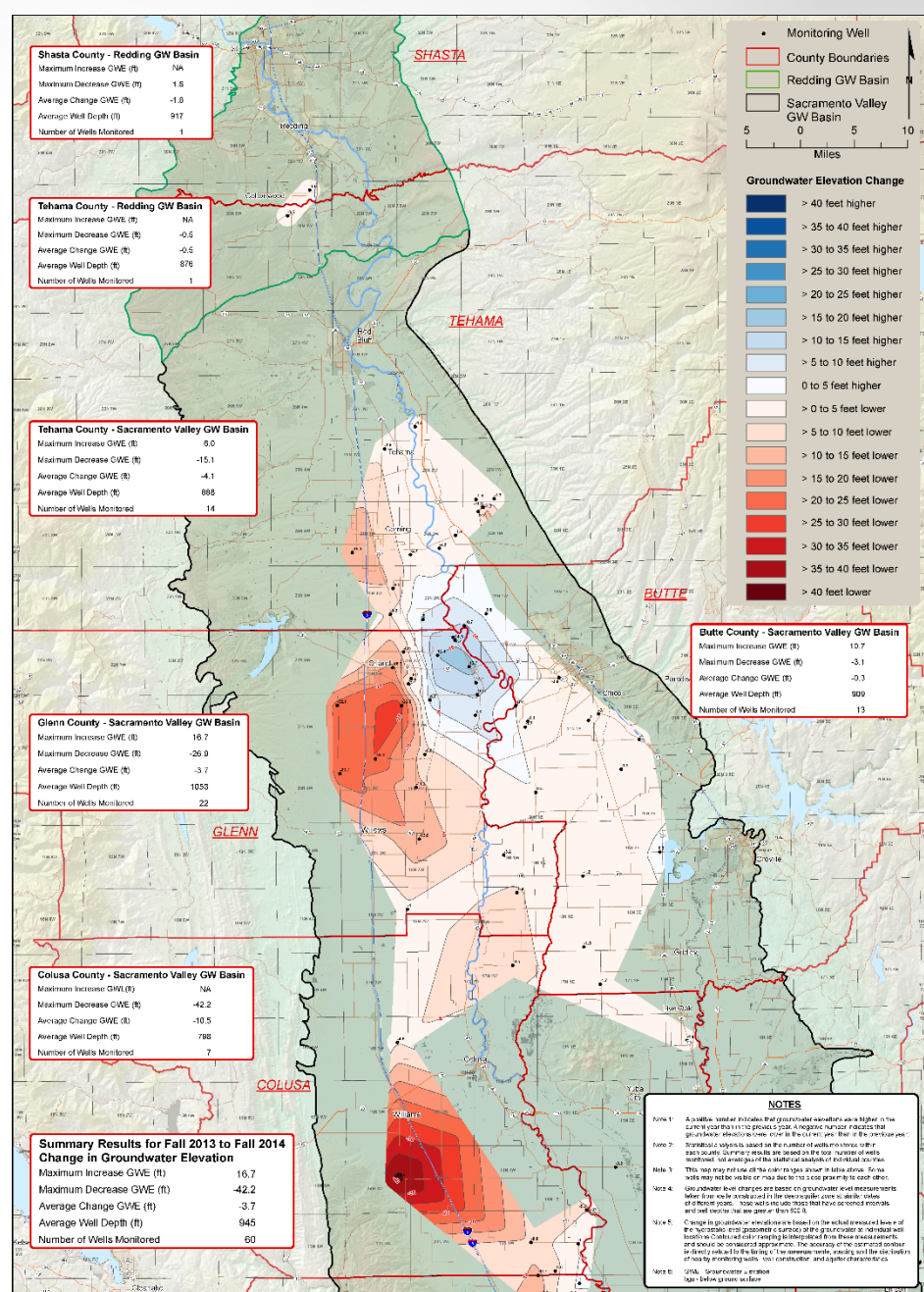
Groundwater Elevation Change Map

Fall 2013 to 2014

well depth:
greater than 600 feet
below ground surface

Glenn County - Sacramento Valley GW Basin

Maximum Increase GWE (ft)	16.7
Maximum Decrease GWE (ft)	-26.9
Average Change GWE (ft)	-3.7
Average Well Depth (ft)	1053
Number of Wells Monitored	22



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN REGION OFFICE
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Red Bluff, California 96002
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**NORTHERN SACRAMENTO VALLEY
CHANGE IN GROUNDWATER ELEVATION MAP
FALL 2013 TO FALL 2014
DEEP AQUIFER ZONE**
(Well depths deeper than 500 ft bgs)

PLATE 3D-A

JWK
November 2014
TY
G. Gordon



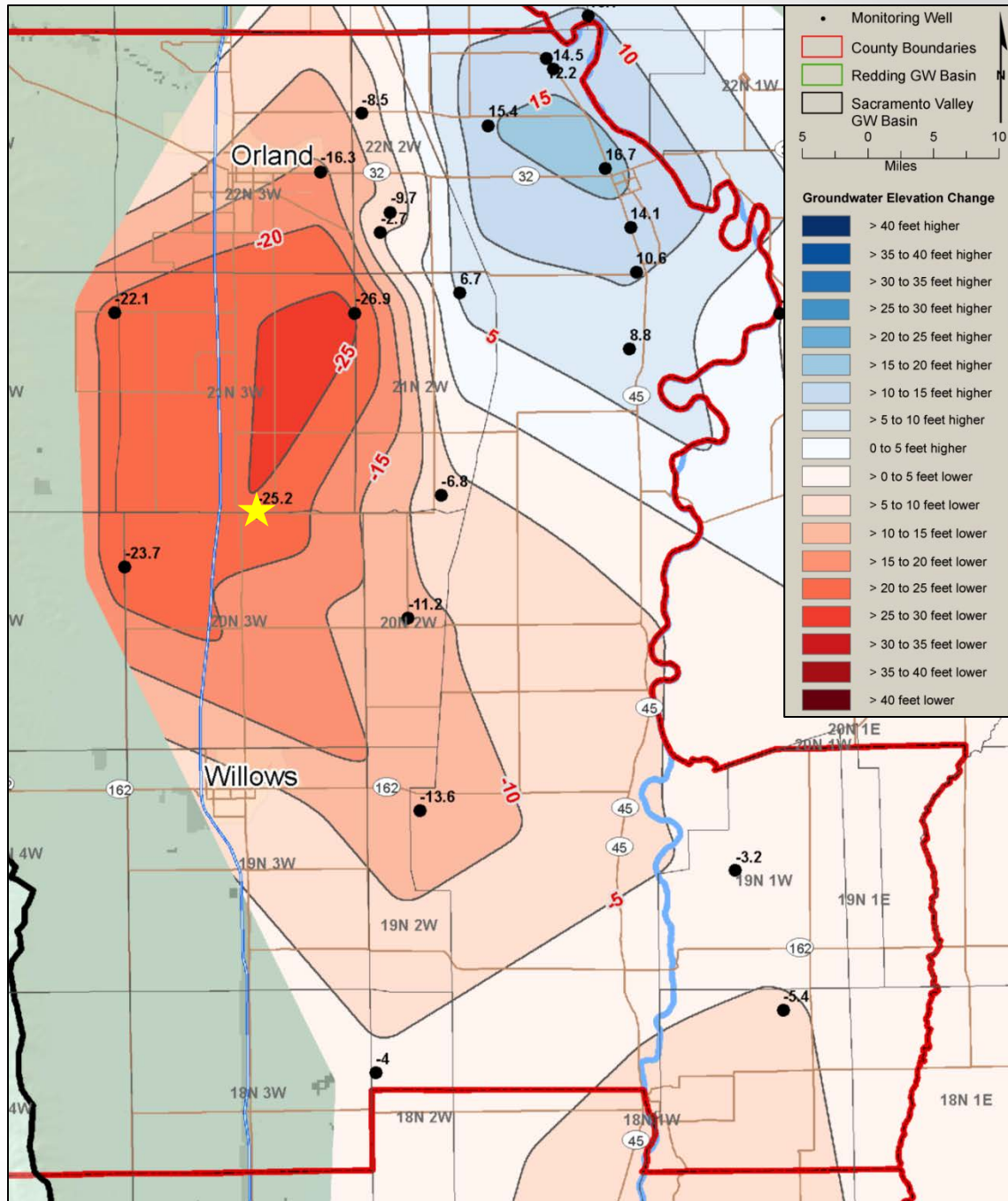
Groundwater Elevation Change Map

Fall 2013 to 2014

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greater than 600 feet
below ground surface

Glenn County - Sacramento Valley GW Basin

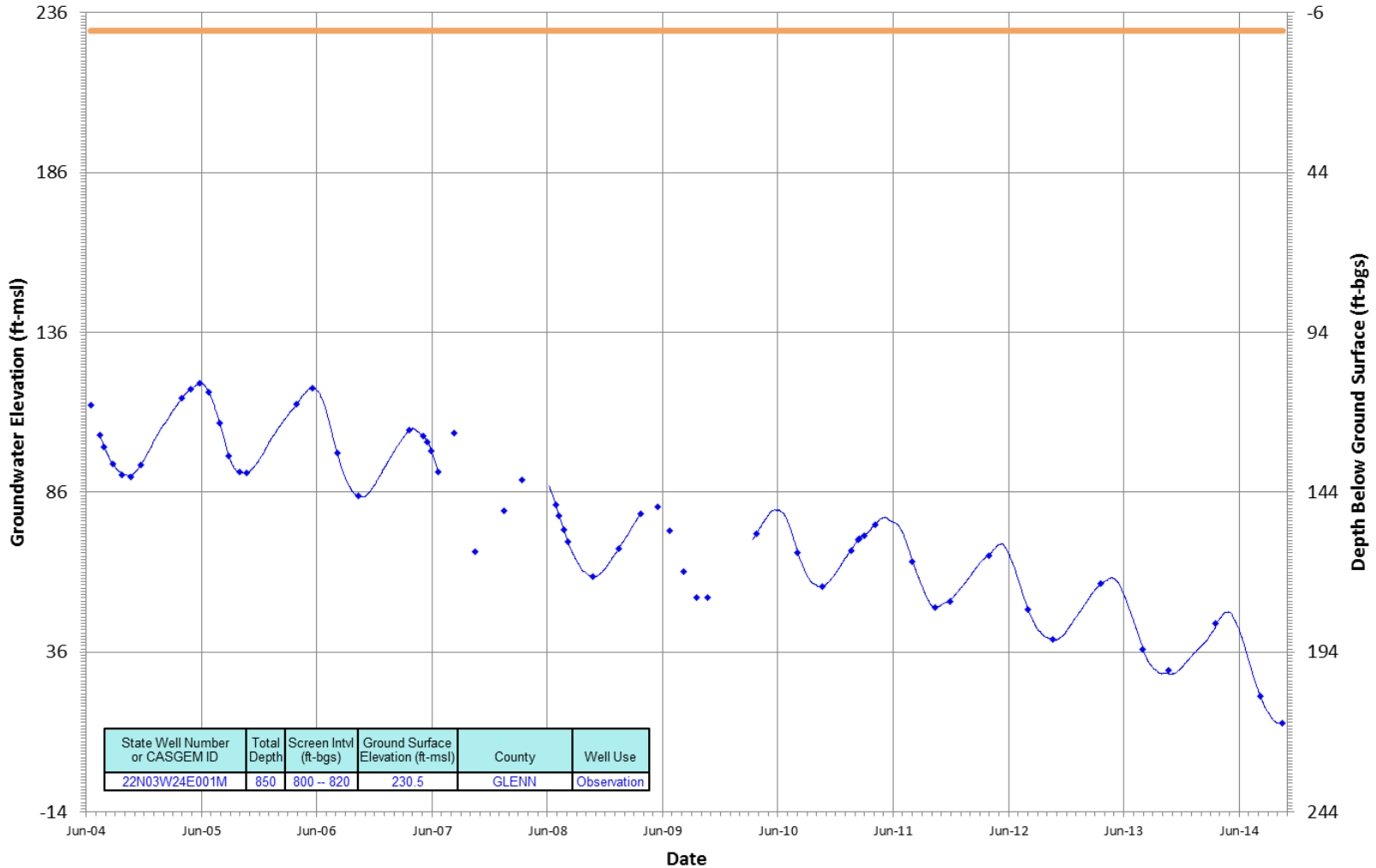
Maximum Increase GWE (ft)	16.7
Maximum Decrease GWE (ft)	-26.9
Average Change GWE (ft)	-3.7
Average Well Depth (ft)	1053
Number of Wells Monitored	22



Groundwater Elevation Hydrograph

22N03W24E001M
 Period Of Record: 06/14/2004 to 10/16/2014

Hydrograph Criteria
 County Name is 'GLENN'
 Total Depth is at or greater than 600



— Ground Surface Elev — Mean Daily Measurements ◆ Periodic Measurements ■ Questionable Measurements

-New- DWR Groundwater Information Center



<http://water.ca.gov/groundwater/>

The screenshot shows the homepage of the California Department of Water Resources' Groundwater Information Center. The header includes the CA.GOV logo, the department name, and navigation links for Home, Newsroom & Events, Issues, and About Us. A search bar and location indicators for DWR and California are also present. The main banner features a blue background with a water pipe and the text "Groundwater Information Center".

Introduction

The Groundwater Information Center is DWR's portal for groundwater information, groundwater management plans, water well basics, and statewide and regional reports, maps and figures. California's groundwater provides approximately 30 to 46 percent of the State's total water supply, depending on wet or dry years, and serves as a critical buffer against drought and climate change. Some communities in California are 100 percent reliant upon groundwater for urban and agricultural use.

DWR has a long-standing history of collecting and analyzing groundwater data, investigating and reporting groundwater conditions, implementing local groundwater assistance grants, encouraging integrated water management, and providing the technical expertise needed to improve groundwater management practices. DWR will continue to work with local agencies and regional organizations to provide data that enables sustainable groundwater management. The Groundwater Information Center website will be updated as new information becomes available.

New Groundwater and Sustainable Groundwater Management websites

As a result of the recent groundwater legislation, DWR has created two new websites relating to groundwater: "Groundwater" and "Sustainable Groundwater Management". The **new DWR Groundwater website** provides a central hub to California's major groundwater programs that DWR is responsible for, including Sustainable Groundwater Management, California Statewide Groundwater Elevation Monitoring (CASGEM), and Bulletin 118. The **new DWR Sustainable Groundwater Management website** provides information related to DWR's new Sustainable Groundwater Management Program.

The map, titled "CASGEM Groundwater Basin Prioritization", shows the state of California with various groundwater basins highlighted in different colors (green, yellow, orange, red) to indicate their priority levels. A legend on the right side of the map explains the color coding.

Initial Groundwater Basin Prioritization under the Sustainable Groundwater Management (SGM) Act

The SGM Act directs DWR to develop the initial groundwater basin priority by January 31, 2015. DWR has concluded that the basin prioritization finalized in June 2014 under the California Statewide Groundwater Elevation Monitoring (CASGEM) program will be the initial basin prioritization. The SGM Act applies to the 127 High and Medium priority groundwater basins, which account for approximately 96 percent of groundwater use in California. [Read more here...](#)

Groundwater Legislation, Sustainable Groundwater Management Act

On September 16, 2014, Governor Jerry Brown signed into law a three-bill legislative package, known as the Sustainable Groundwater Management Act.

GROUNDWATER HOME **NEW**

GROUNDWATER INFORMATION CENTER

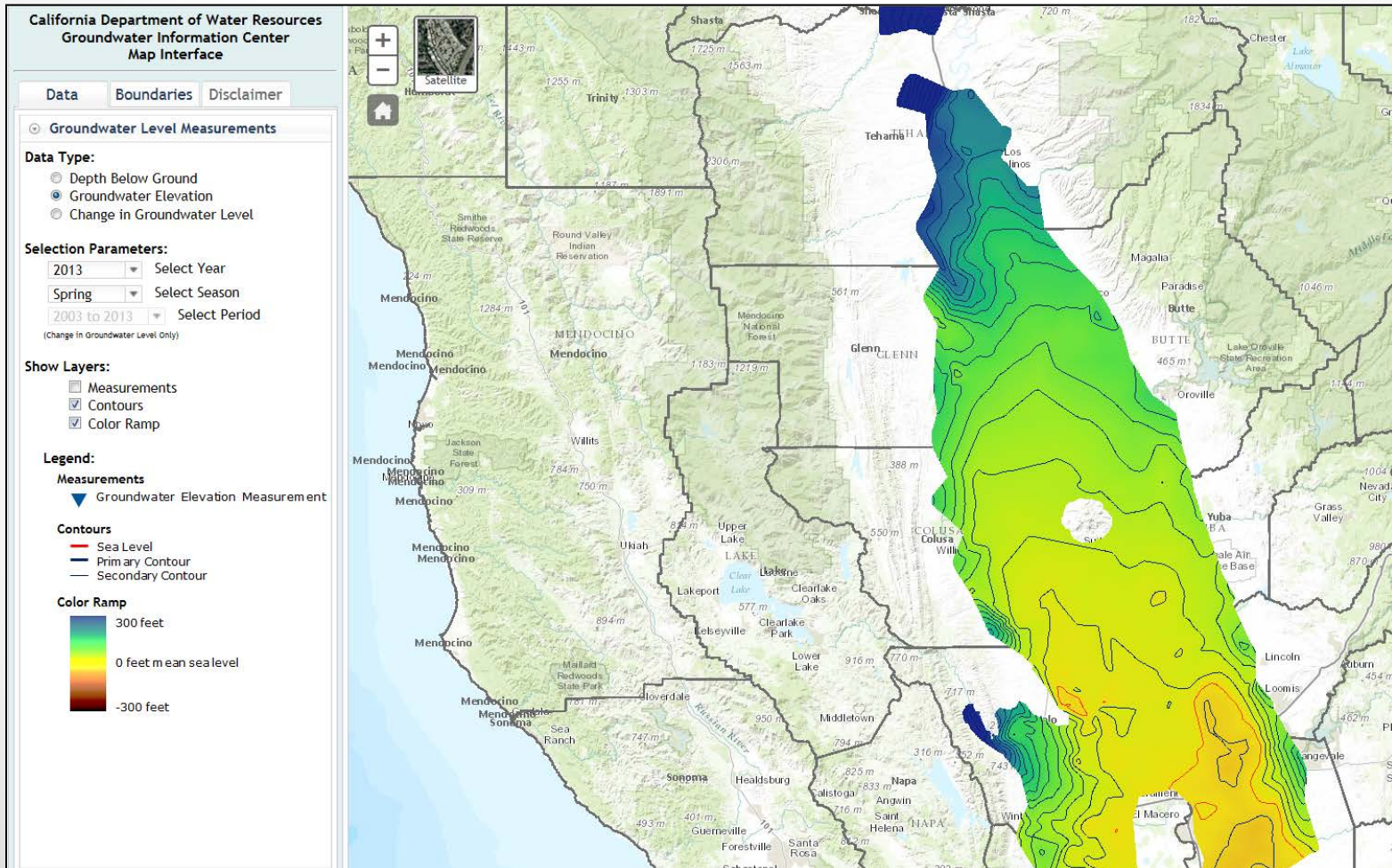
- » Groundwater Basics
- » Maps and Reports
- » Groundwater Management
 - » Key Legislation
 - » Groundwater Management Plans
 - » Developing a Groundwater Management Plan
- » Groundwater Well Information
 - » Well Completion Reports
 - » Well Standards
 - » Well Inquiries
 - » Well Permitting Agencies
- » Monitoring and Data Collection
 - » CASGEM
 - » Water Data Library
 - » Water Quality
 - » Land Subsidence
- » Interactive Map Application
- » Contacts
- » SUSTAINABLE GROUNDWATER MANAGEMENT **NEW**
- » CASGEM
- » BULLETIN 118

Highlights

-New-
DWR Groundwater
Information Center
Maps



<http://water.ca.gov/groundwater/>



Thank you



<http://water.ca.gov/groundwater/>