DWR Update:
Groundwater Conditions

Colusa County and Beyond

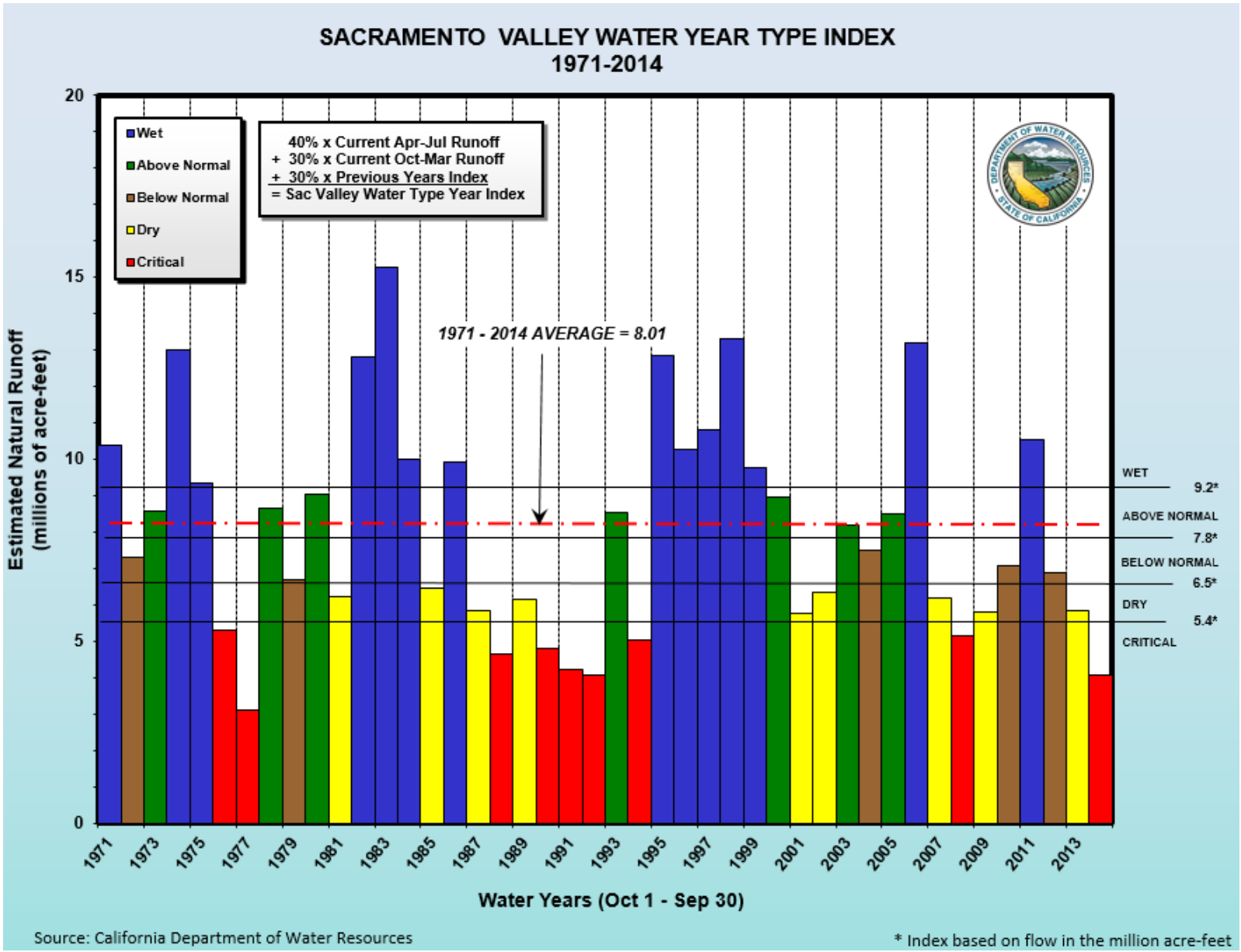
May 12, 2015

Roy Hull, Engineering Geologist
CA Department of Water Resources
Red Bluff

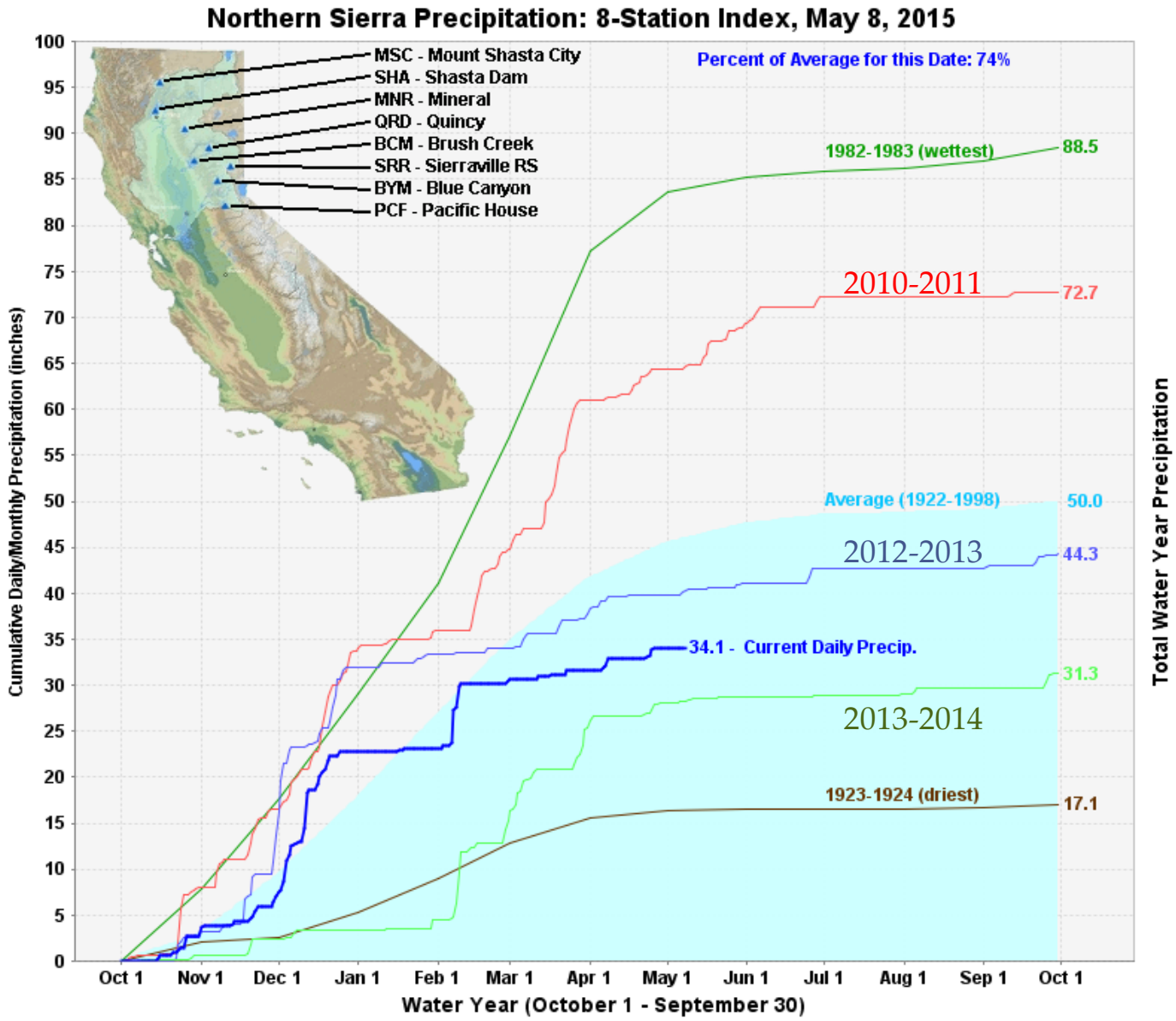
Agenda

- Water Year
- Spring 2015 GW change maps
  - Colusa County with select hydrographs
  - North Sacramento Valley
  - Statewide information
- DWR GW Information Center

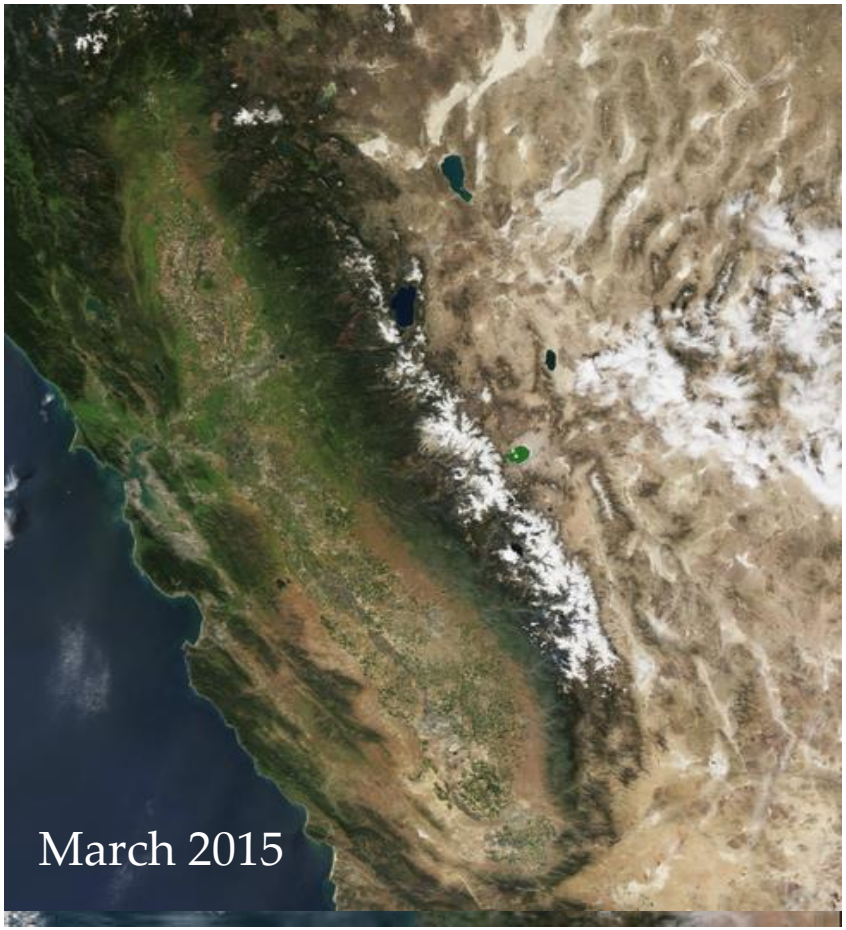
Water Year Index 1971-2014



Sacramento Valley Precipitation

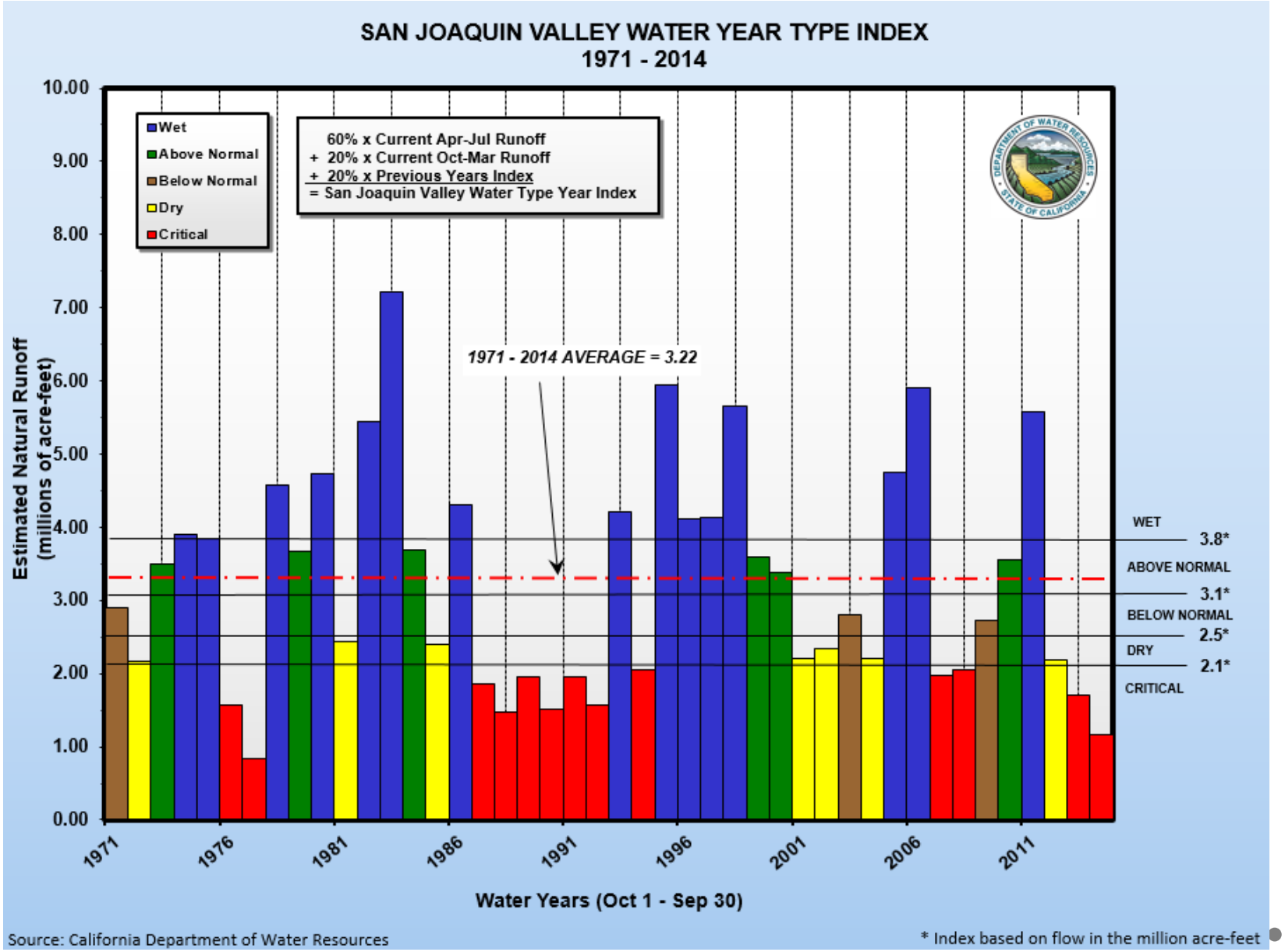


Snow Pack



Key for April – July runoff numbers

Water Year Index 1971-2014



Source: California Department of Water Resources

* Index based on flow in the million acre-feet

Groundwater Change in Elevation Maps

Hydrographs

• • •

Spring 2015

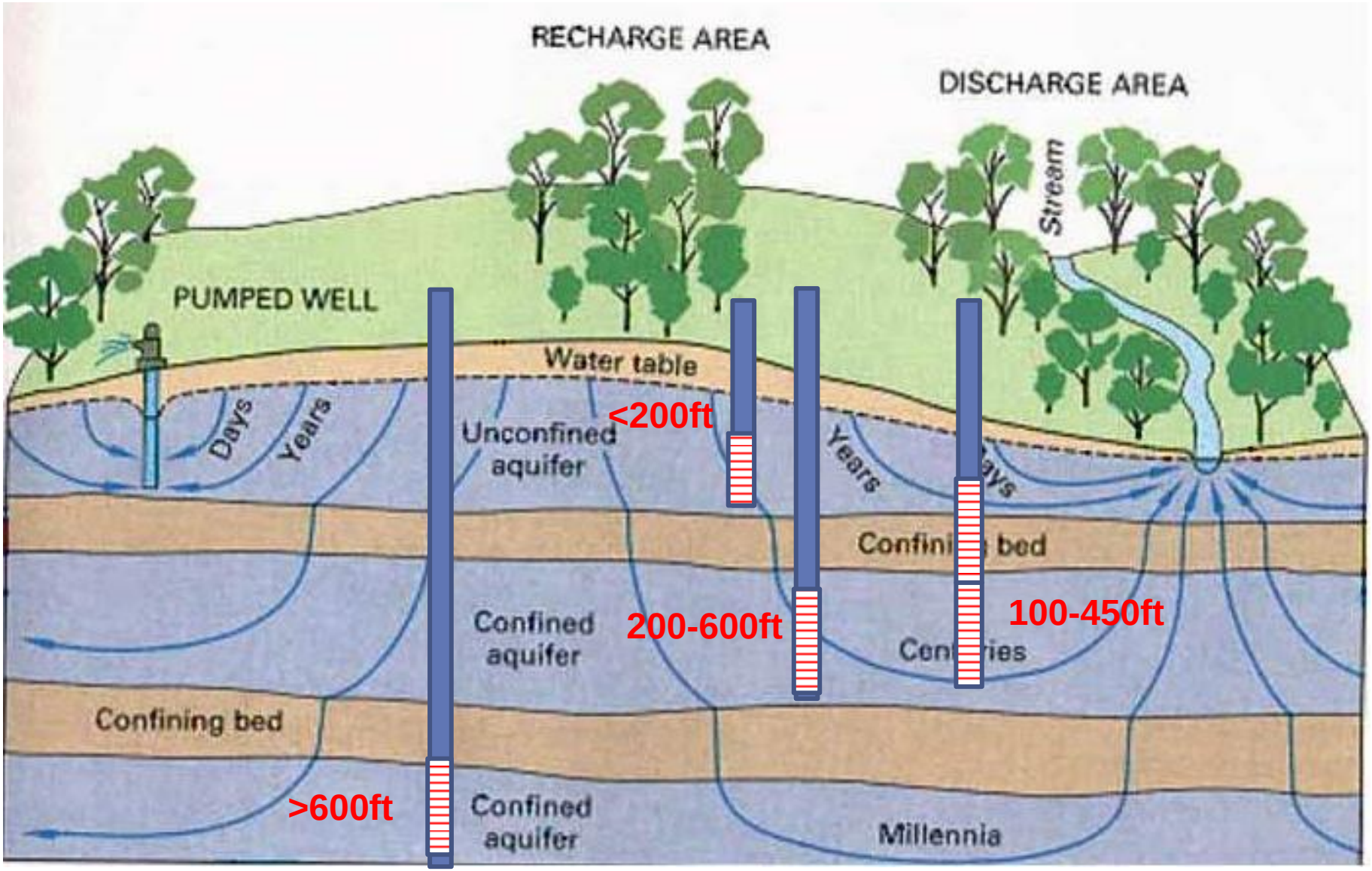
Groundwater Monitoring and Groundwater Elevation Change Maps

- Who monitors groundwater levels in Colusa County?
  - CA Department of Water Resources
  - Glenn Colusa Irrigation District
  - Reclamation District 108
  - US Bureau of Reclamation

Understanding GWL Change

- Precipitation Amount and Timing
  - Previous season - Too little, late in season, and lack of snow
  - Current season – Too little, early in season, and even less snow
- Land Use
  - Truck crops to orchards, new orchards
- Source
  - GW, SW or Mix
- Irrigation Methods and Timing
  - Flood or (micro) drip
- Timing of measurements - results could be lower or higher…

Groundwater level data are then grouped for analysis by well depth



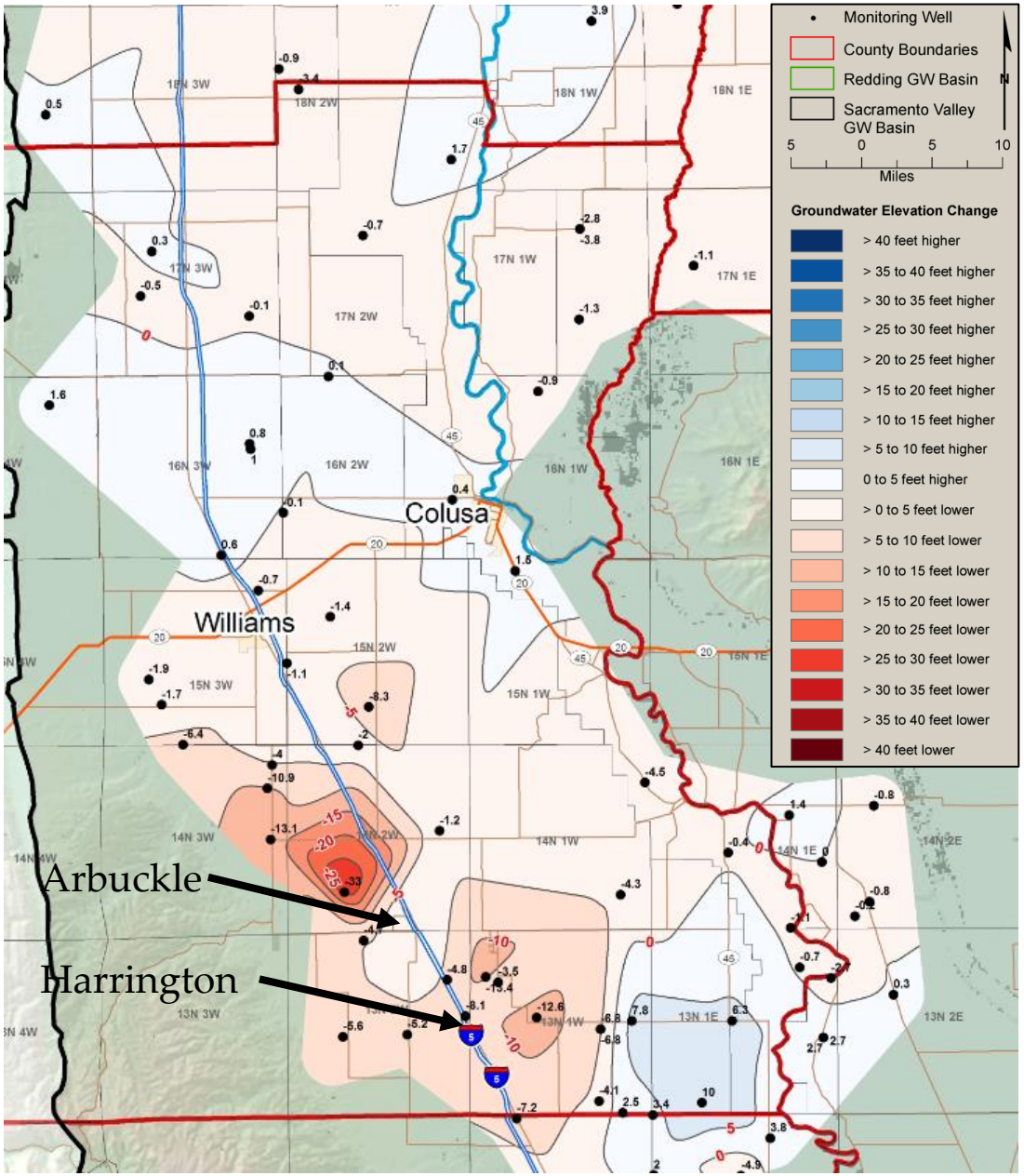
Decoding Change Maps

Groundwater Elevation Change Map Colusa County

Spring 2014 to 2015

Average:
100 to 450 feet
below ground surface

Colusa County - Sacramento Valley GW Basin	
Maximum Increase GWL(ft)	10.0
Maximum Decrease GWE (ft)	-33.0
Average Change GWE (ft)	-3.0
Average Well Depth (ft)	290
Number of Wells Monitored	51

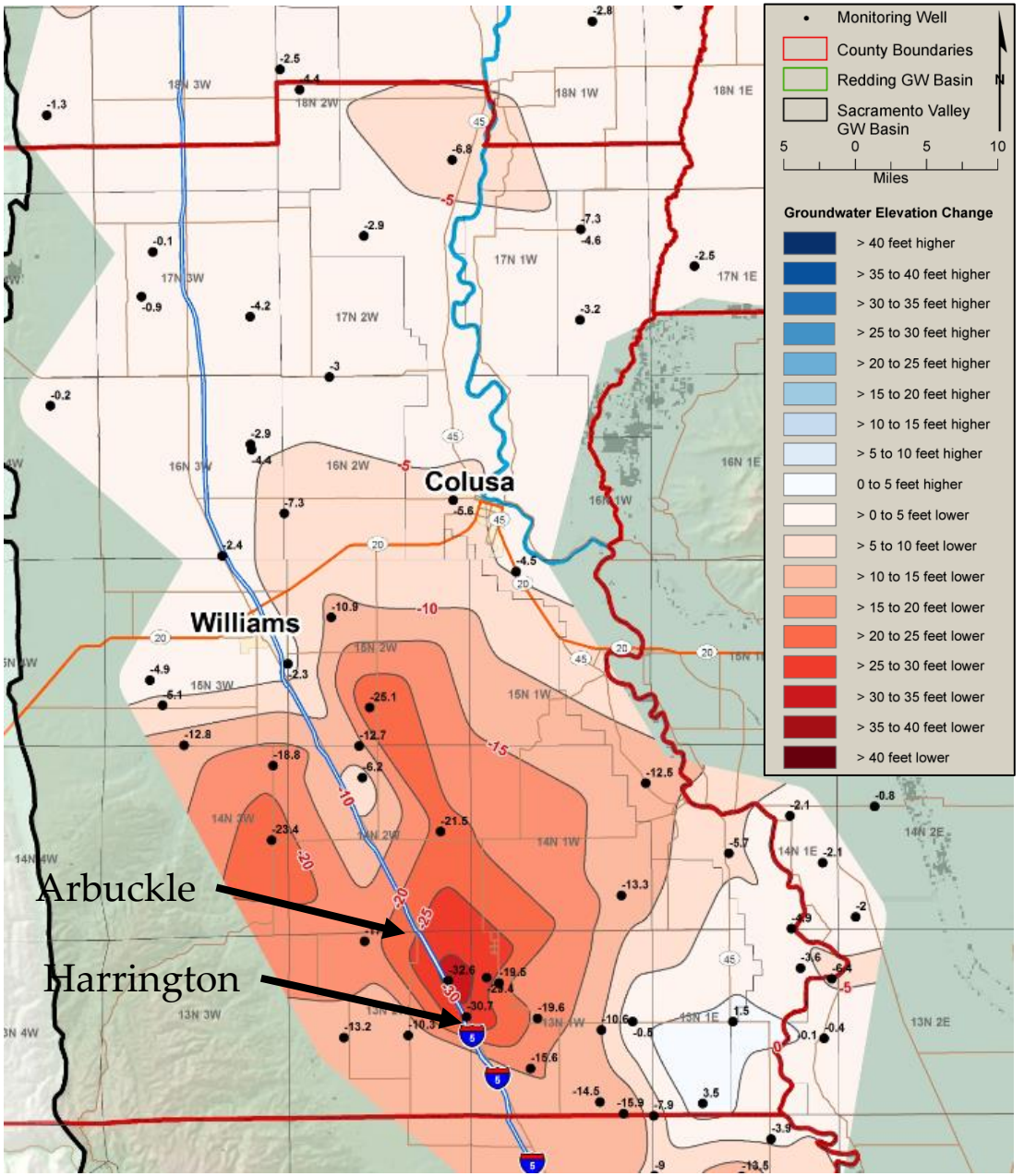


Groundwater Elevation Change Map Colusa County

Spring 2011 to 2015

Average:
100 to 450 feet
below ground surface

Colusa County - Sacramento Valley GW Basin	
Maximum Increase GWL(ft)	3.5
Maximum Decrease GWE (ft)	-32.6
Average Change GWE (ft)	-9.8
Average Well Depth (ft)	288
Number of Wells Monitored	48

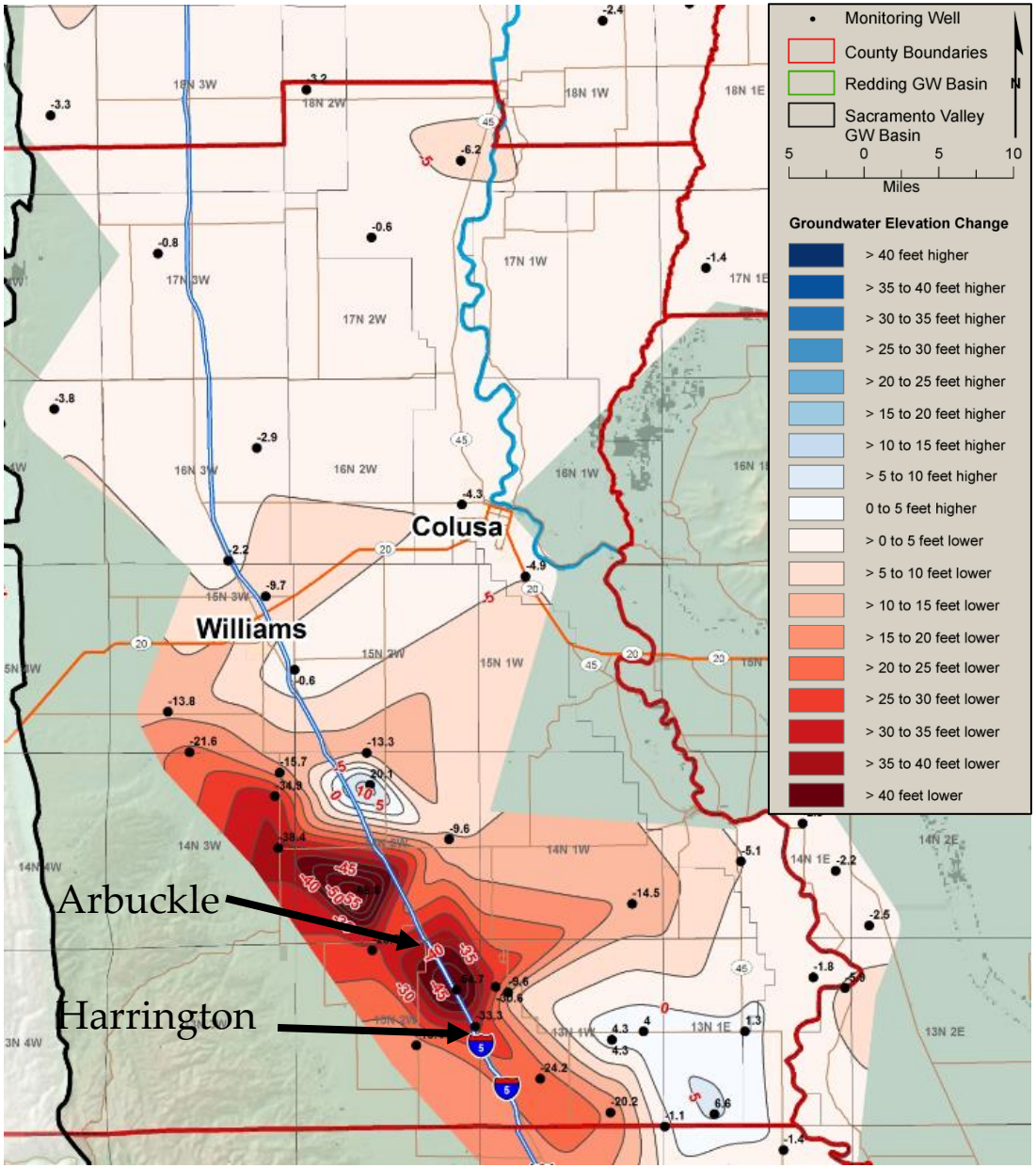


Groundwater Elevation Change Map Colusa County

Spring 2004 to 2015

Average:
100 to 450 feet
below ground surface

Colusa County - Sacramento Valley GW Basin	
Maximum Increase GWL(ft)	20.1
Maximum Decrease GWE (ft)	-68.8
Average Change GWE (ft)	-12.6
Average Well Depth (ft)	276
Number of Wells Monitored	36

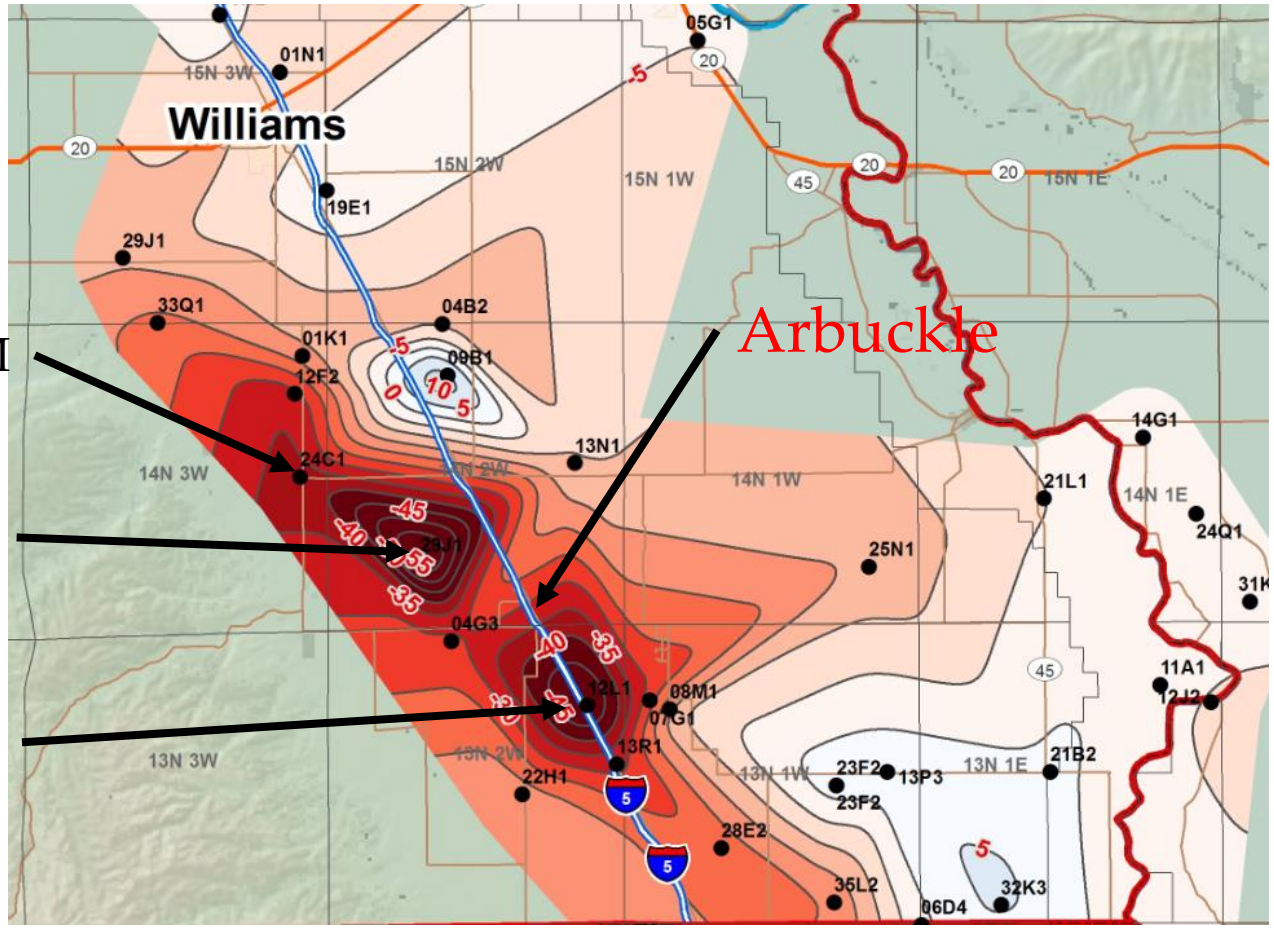


Hydrographs

#3 – 14N03W24C001M

#2 – 14N02W29J001M

#1 - 13N02W12L001M



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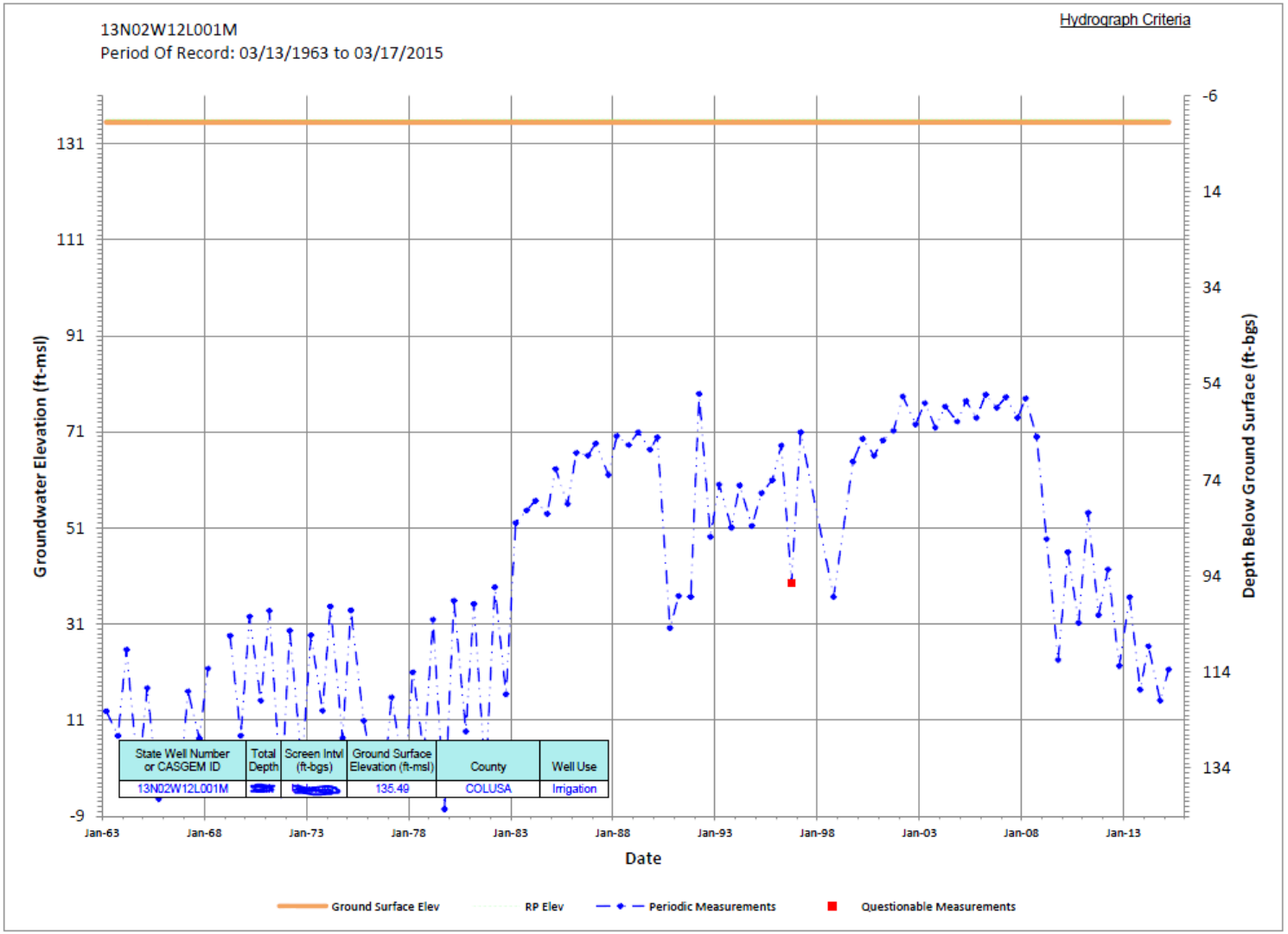

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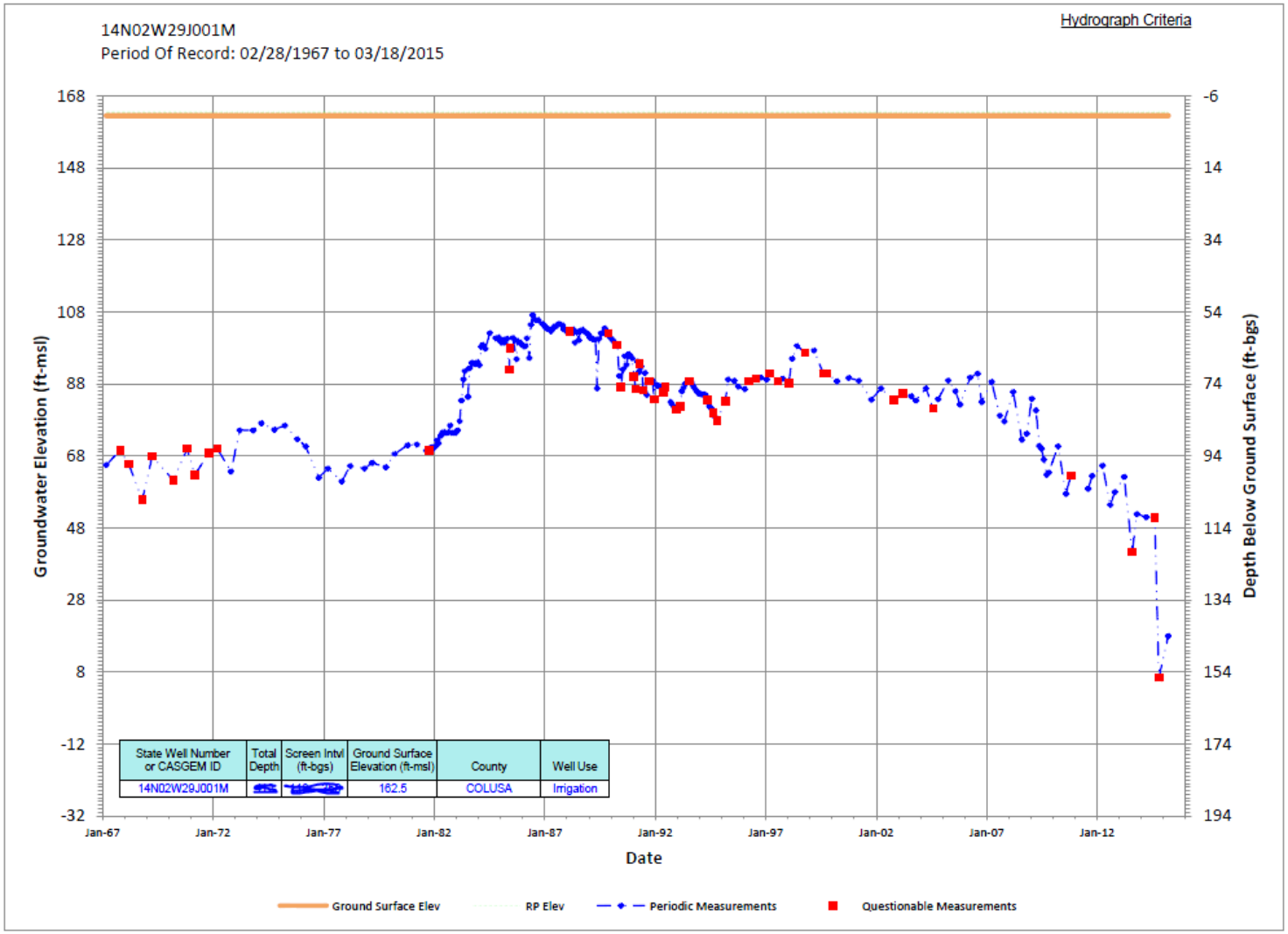

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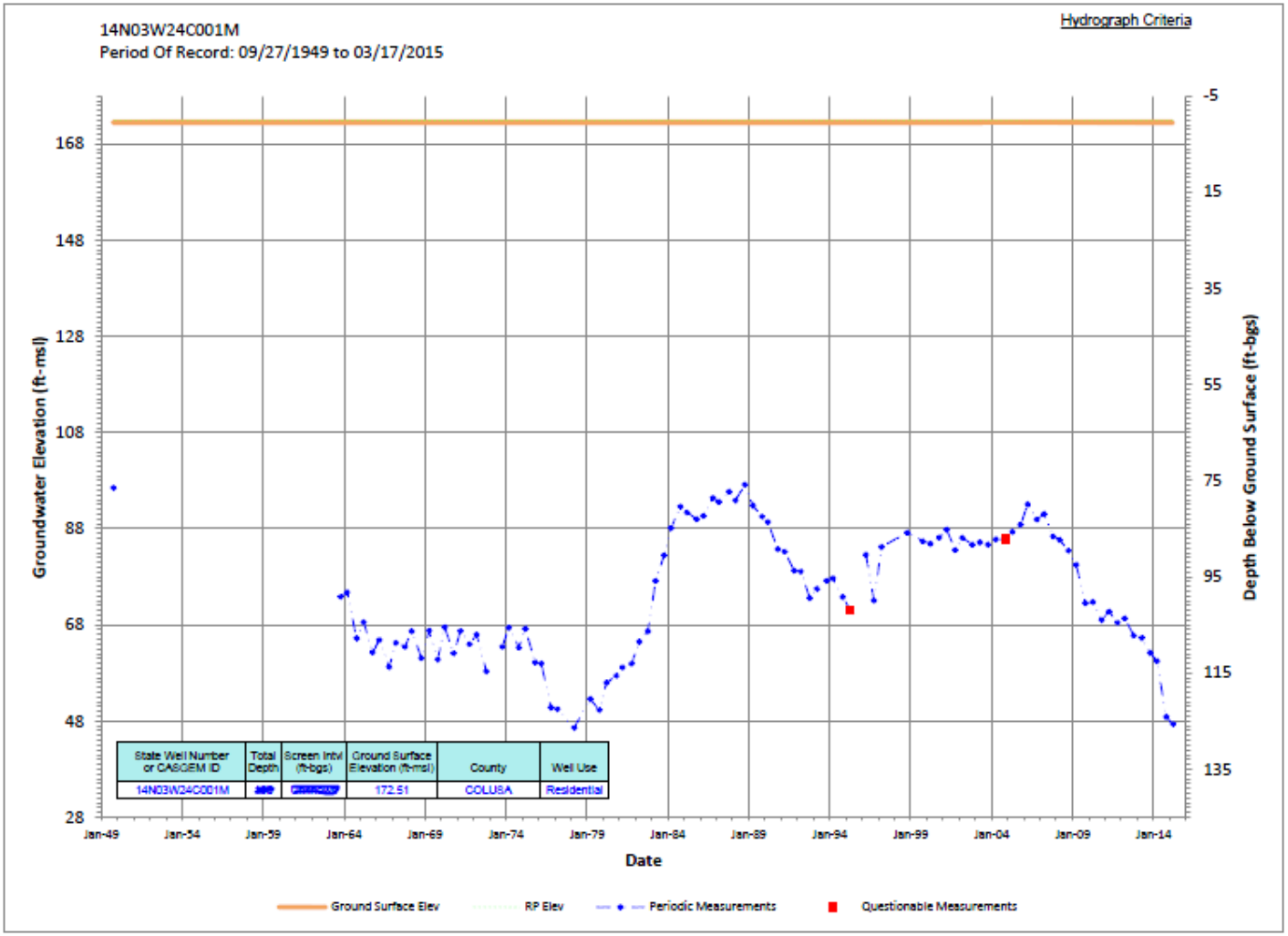
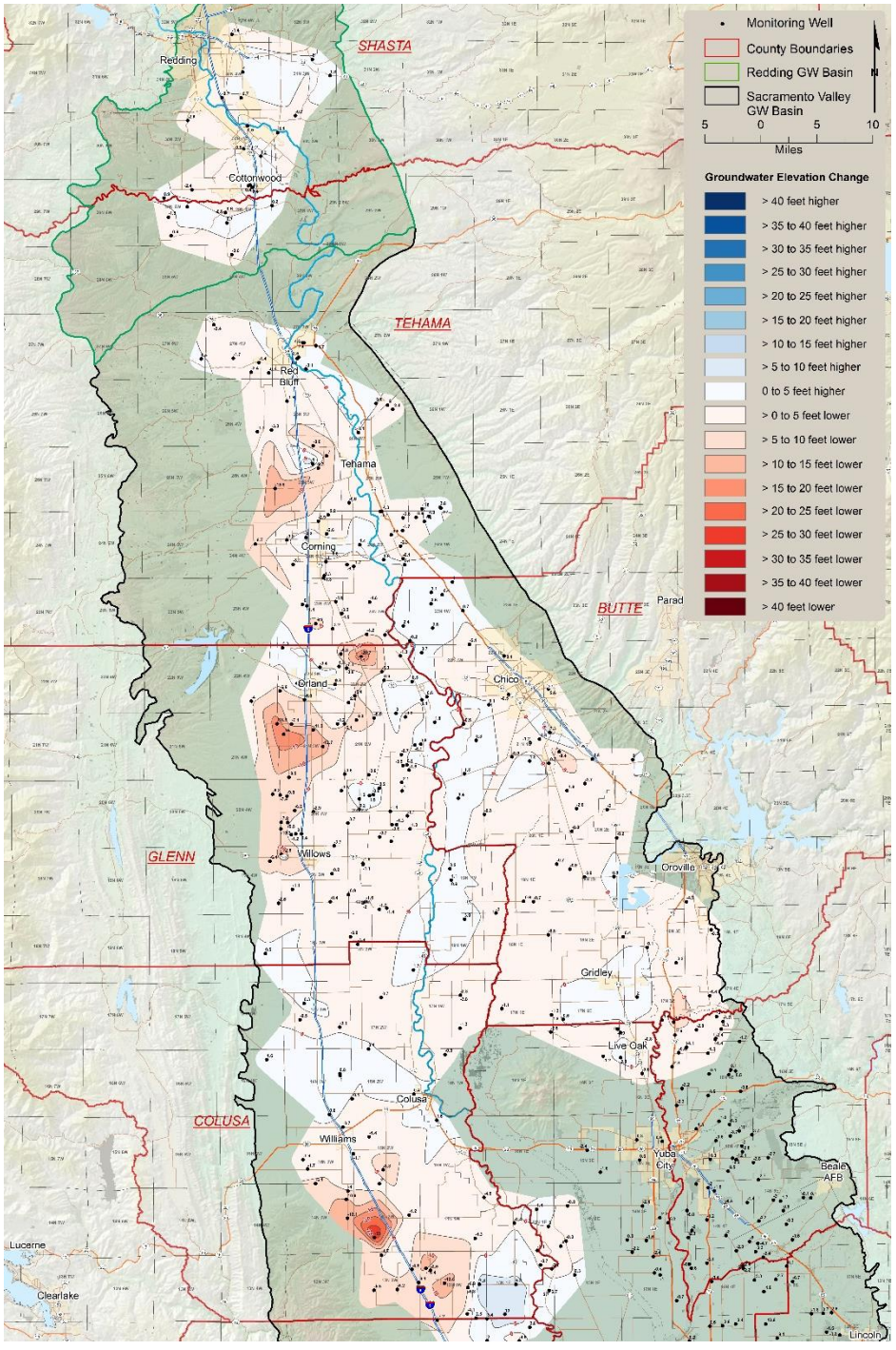


Groundwater Elevation Change Map Sacramento River Valley

Spring 2014 to 2015

Average:
100 to 450 feet
below ground surface

Summary Results for Spring 2014 to Spring 2015 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	10.0
Maximum Decrease GWE (ft)	-33.0
Average Change GWE (ft)	-1.9
Average Well Depth (ft)	268
Number of Wells Monitored	282

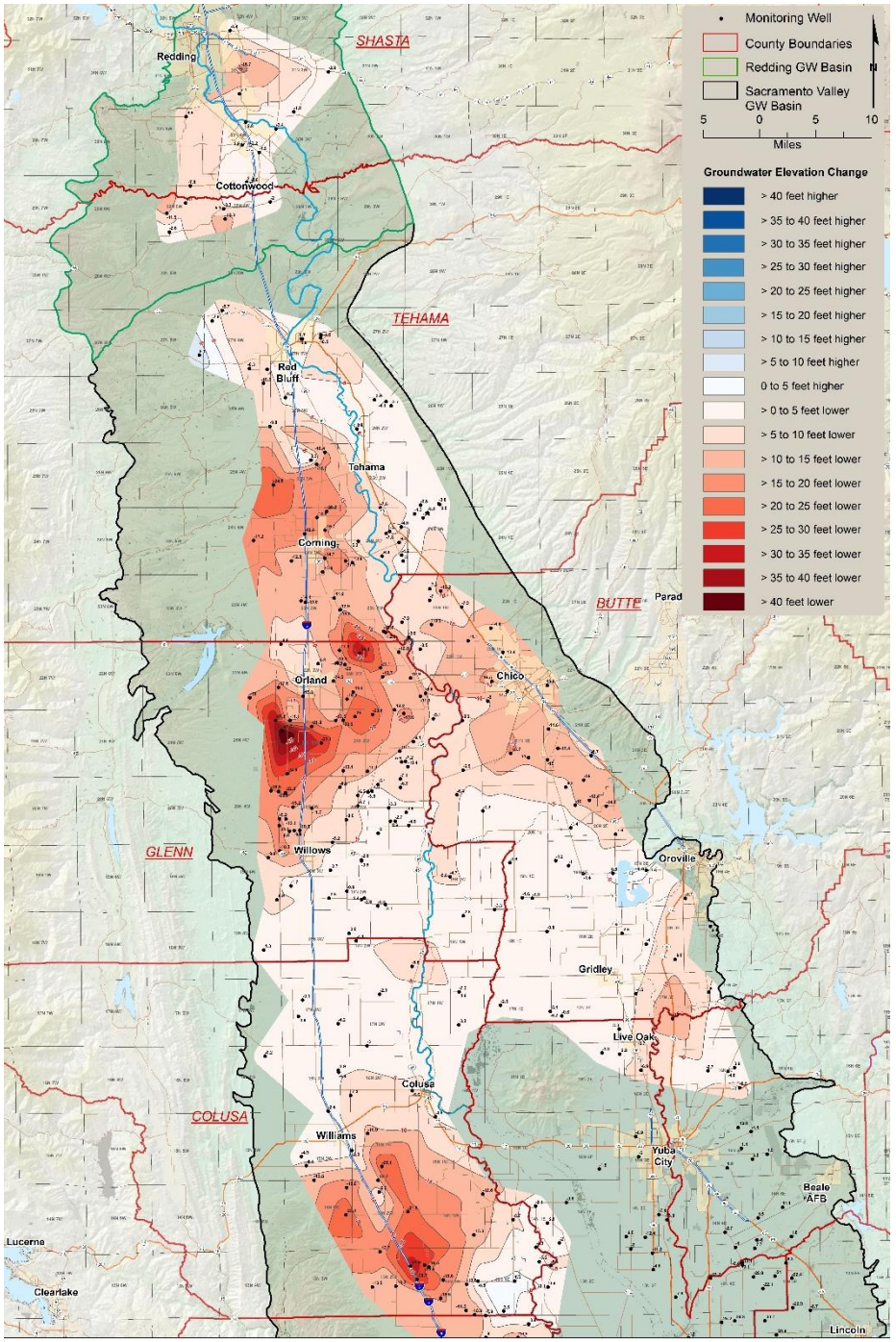


Groundwater Elevation Change Map Sacramento River Valley

Spring 2011 to 2015

Average:
100 to 450 feet
below ground surface

Summary Results for Spring 2011 to Spring 2015 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	8.1
Maximum Decrease GWE (ft)	-47.5
Average Change GWE (ft)	-9.3
Average Well Depth (ft)	264
Number of Wells Monitored	260



Groundwater Elevation Change Map Sacramento River Valley

Spring 2004 to 2015

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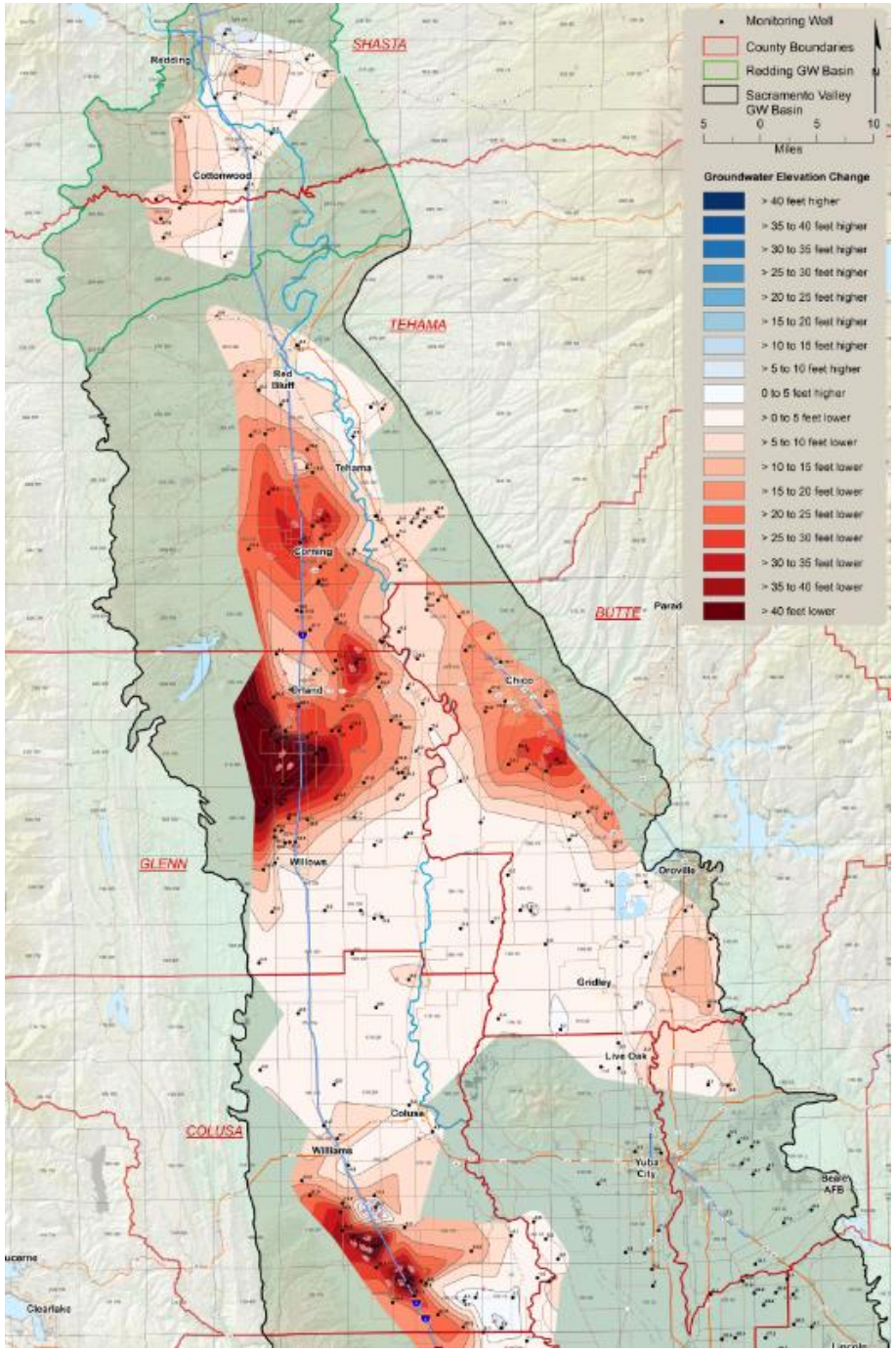
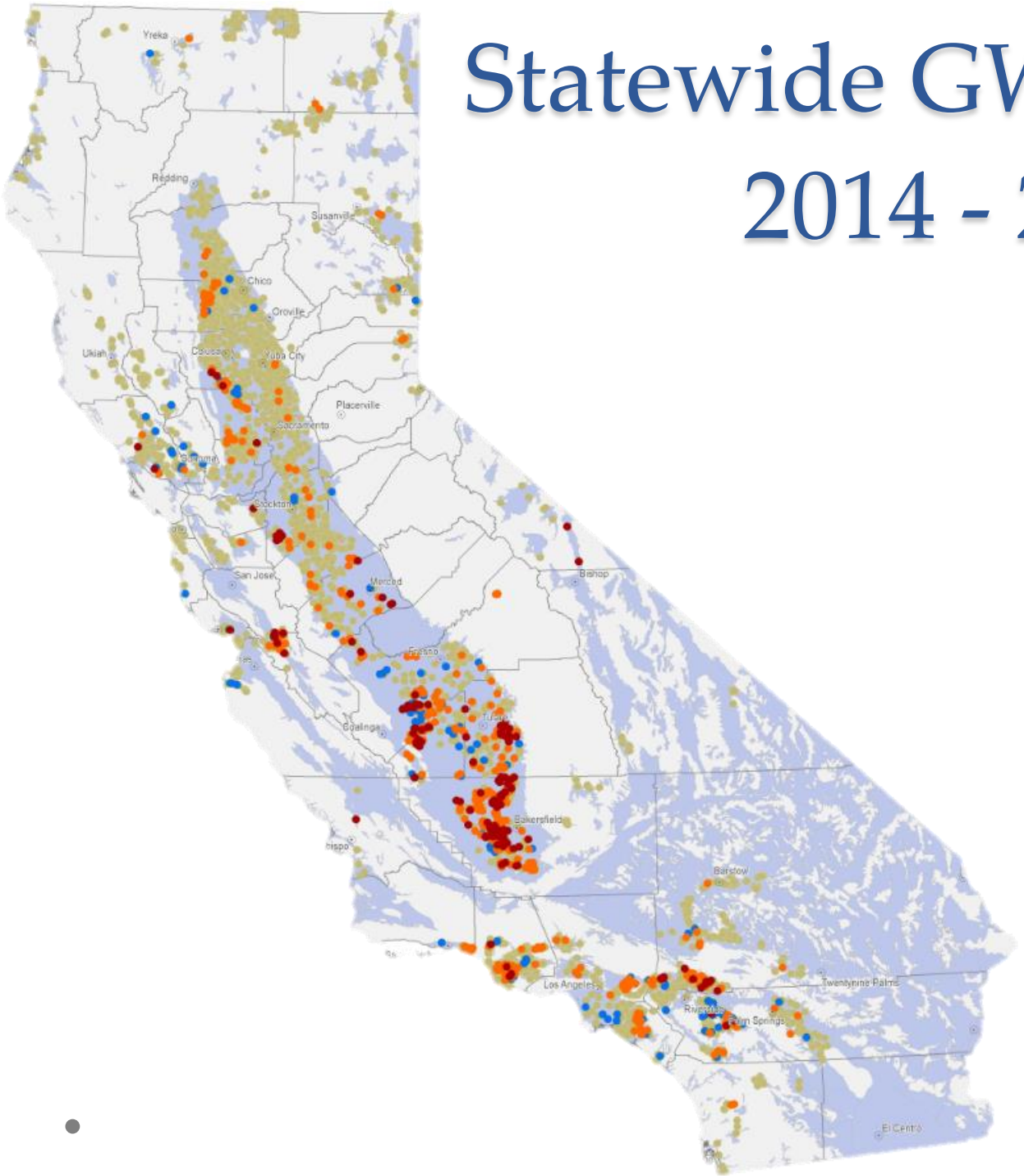
Summary Results for Spring 2004 to Spring 2015 Change in Groundwater Elevation	
Maximum Increase GWE (ft)	20.1
Maximum Decrease GWE (ft)	-73.6
Average Change GWE (ft)	-13.2
Average Well Depth (ft)	254
Number of Wells Monitored	201



Statewide GWL Change 2014 - 2015



Legend:

Groundwater Level Change

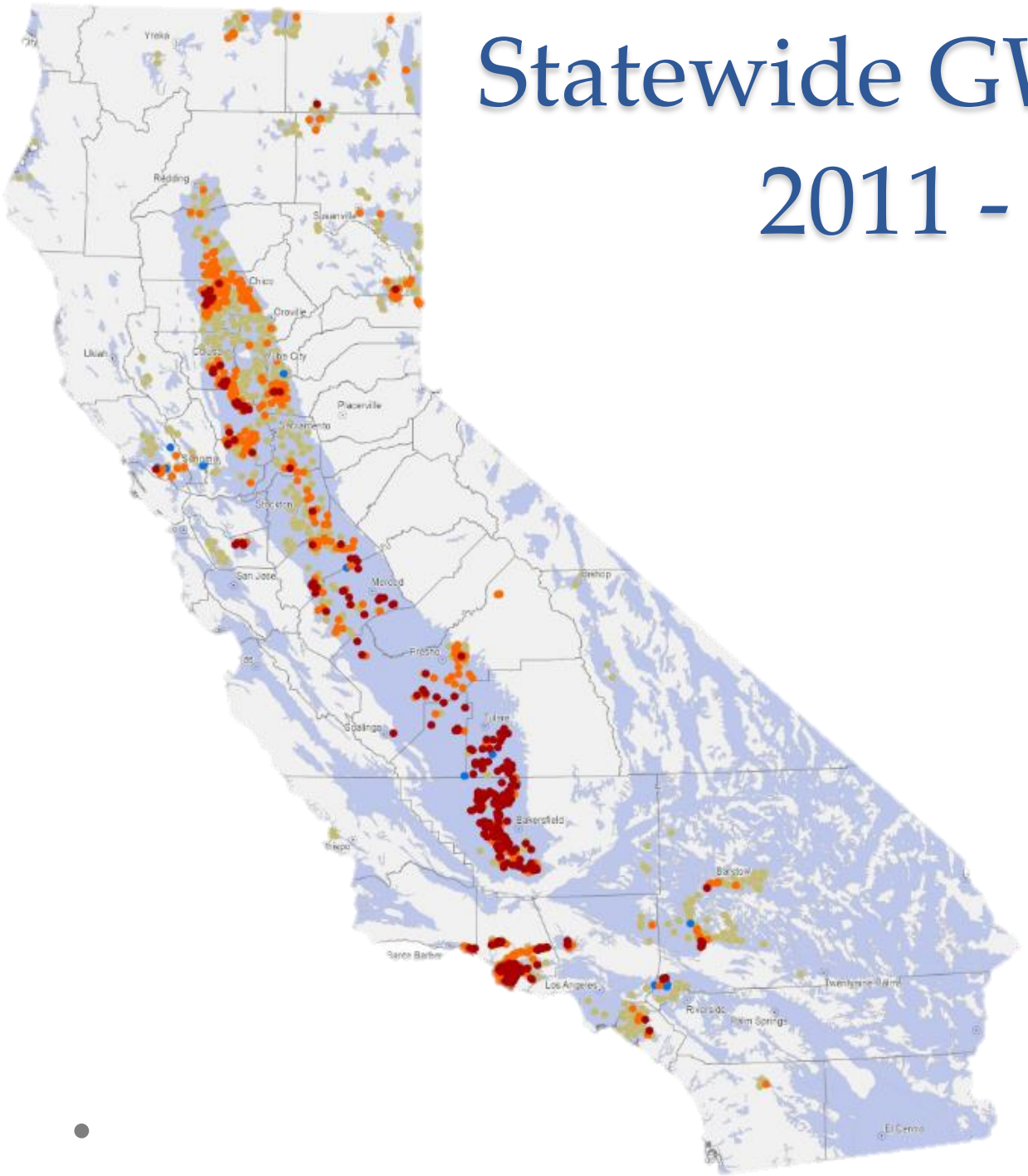
- > 10 ft increase
- +/- 10 ft change
- > 10 to 25 ft decrease
- > 25 ft decrease

Groundwater Basin

County Boundary

*Data is subject to change without notice

Statewide GWL Change 2011 - 2015



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Groundwater Basin

County Boundary

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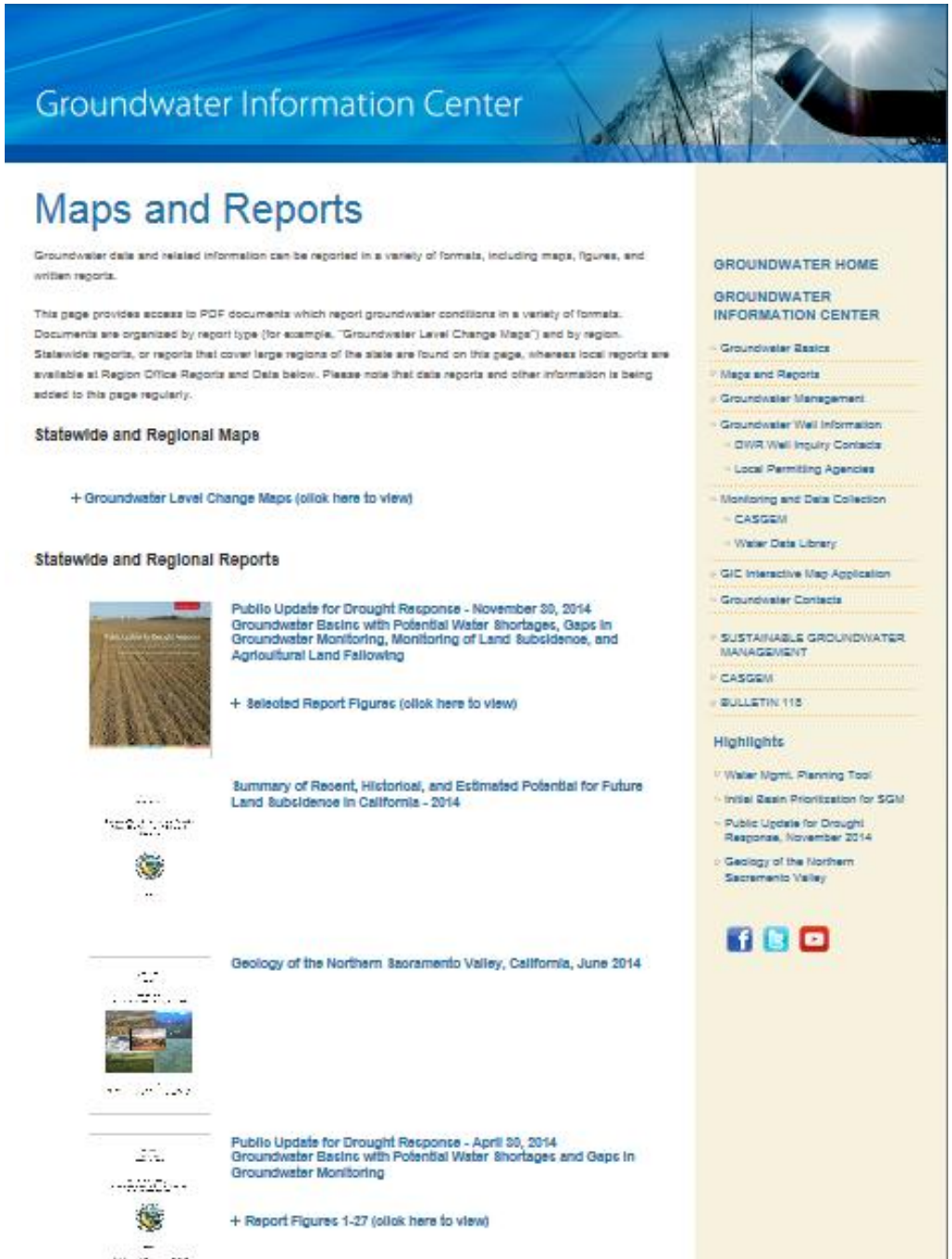
DWR Groundwater Information Center

Maps

http://water.ca.gov/groundwater/gwinfo



Thank-you!
Questions?

Photo Credit: Sue Graue

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