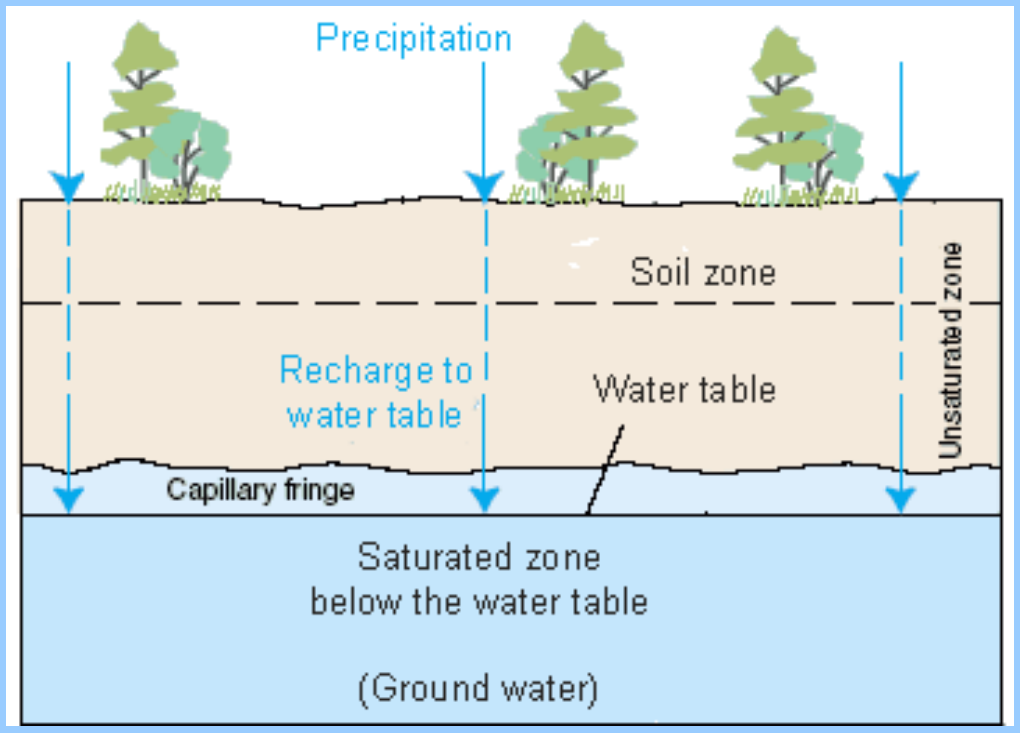
SUSTAINABLE GROUNDWATER MANAGEMENT ACT:
Analysis and Response

February 24, 2015

Public Works Department

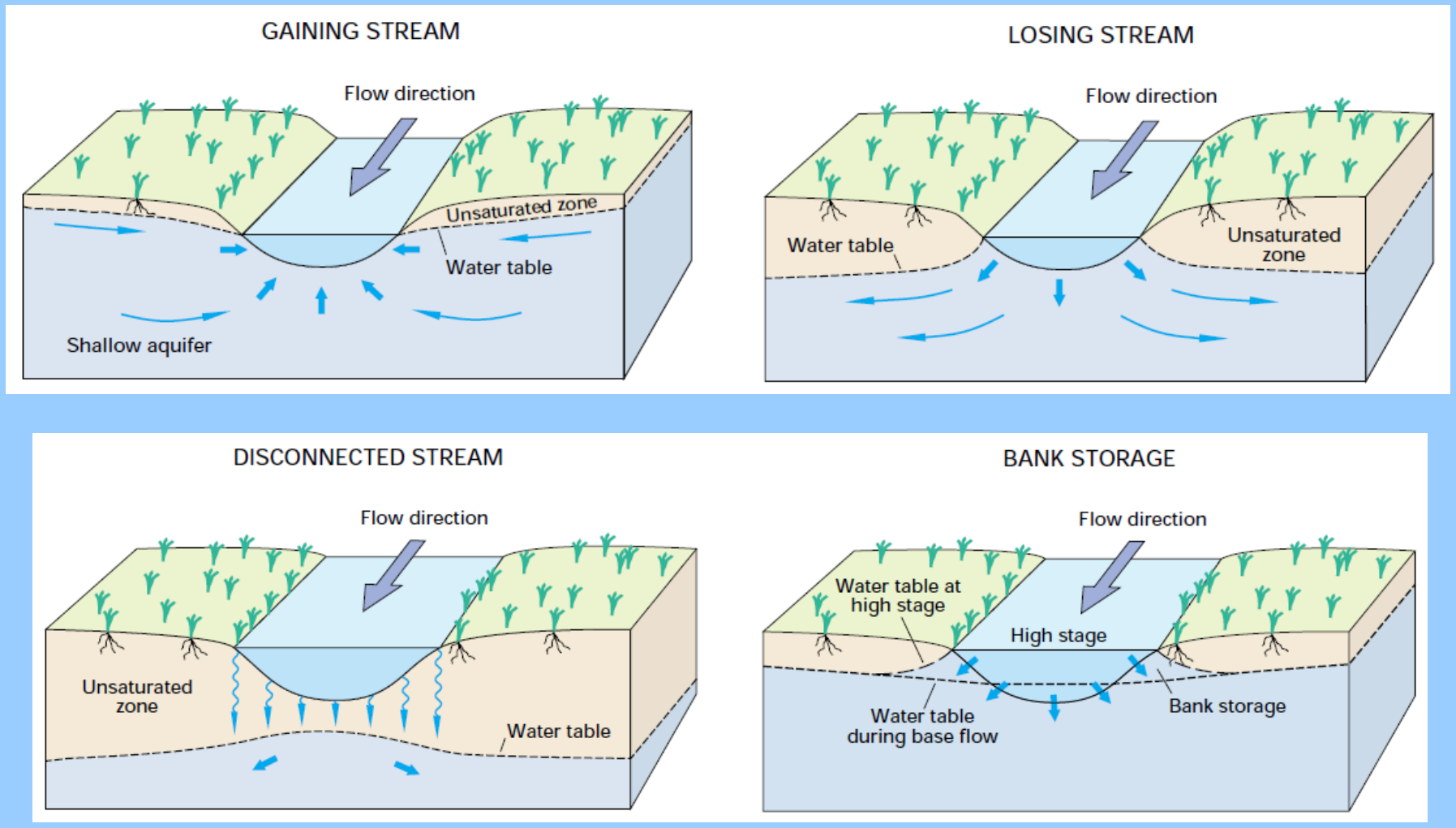
Groundwater Concepts



Source: USGS

Figure 1: Location of groundwater

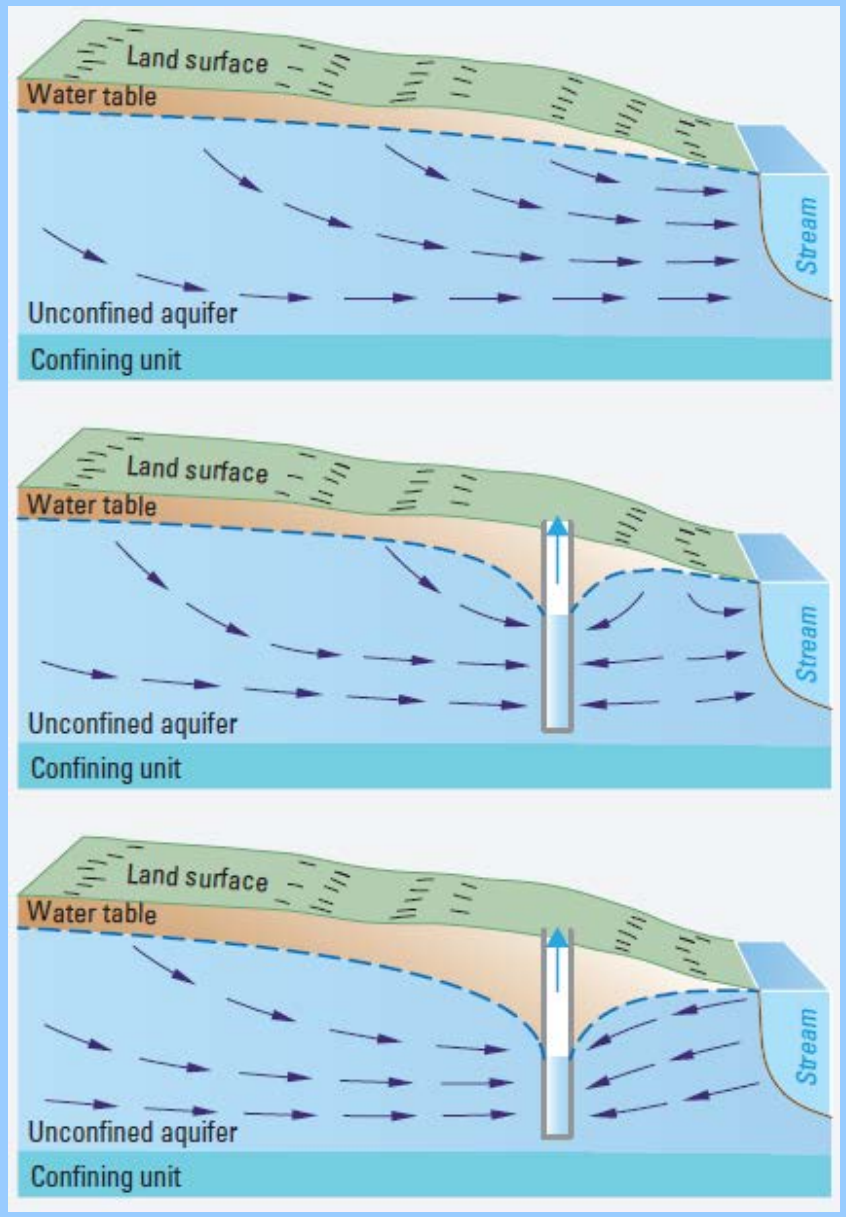
Groundwater Concepts



Source: USGS Circular 1139

Figure 2: Groundwater and stream interactions

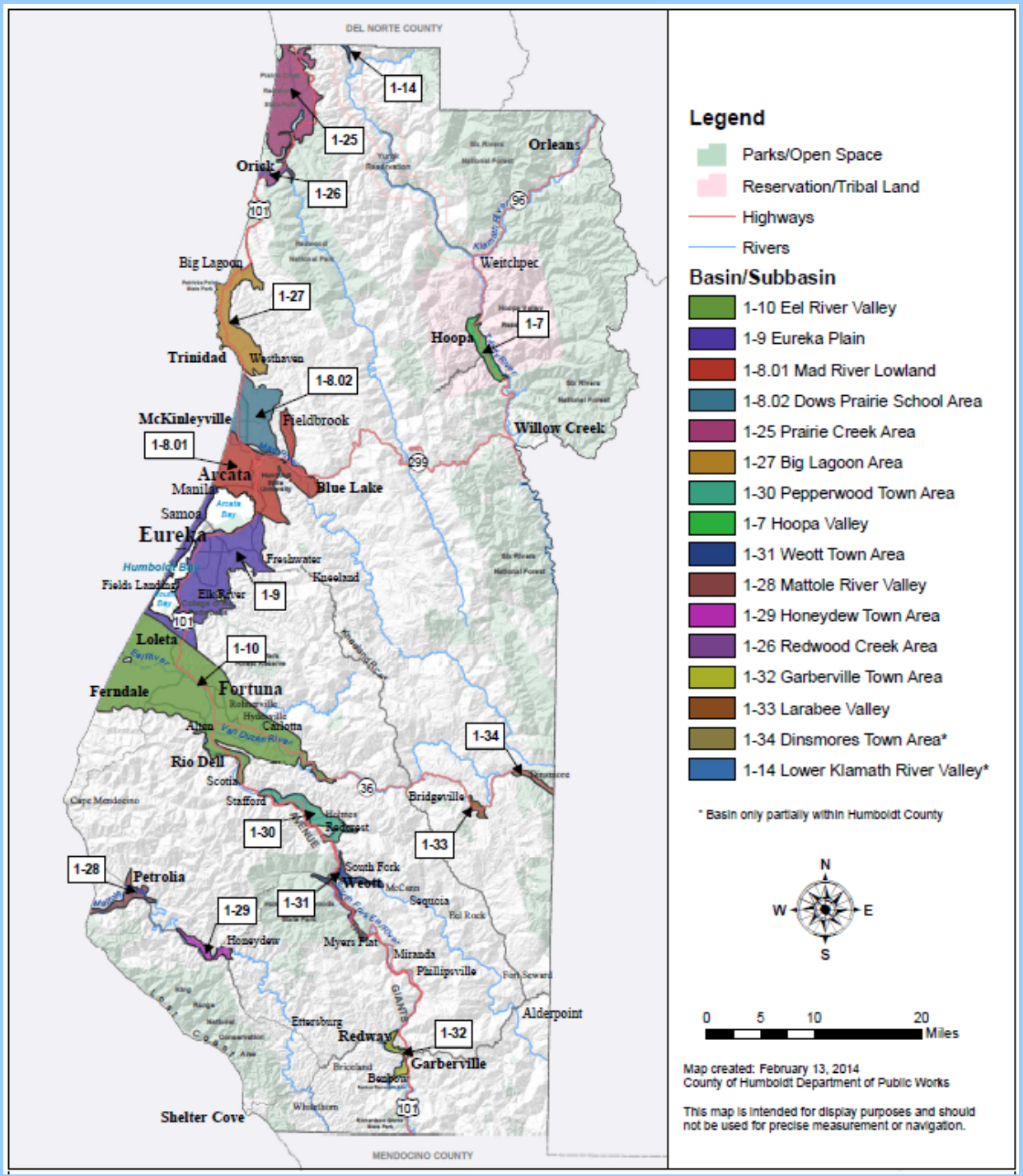
Groundwater Concepts



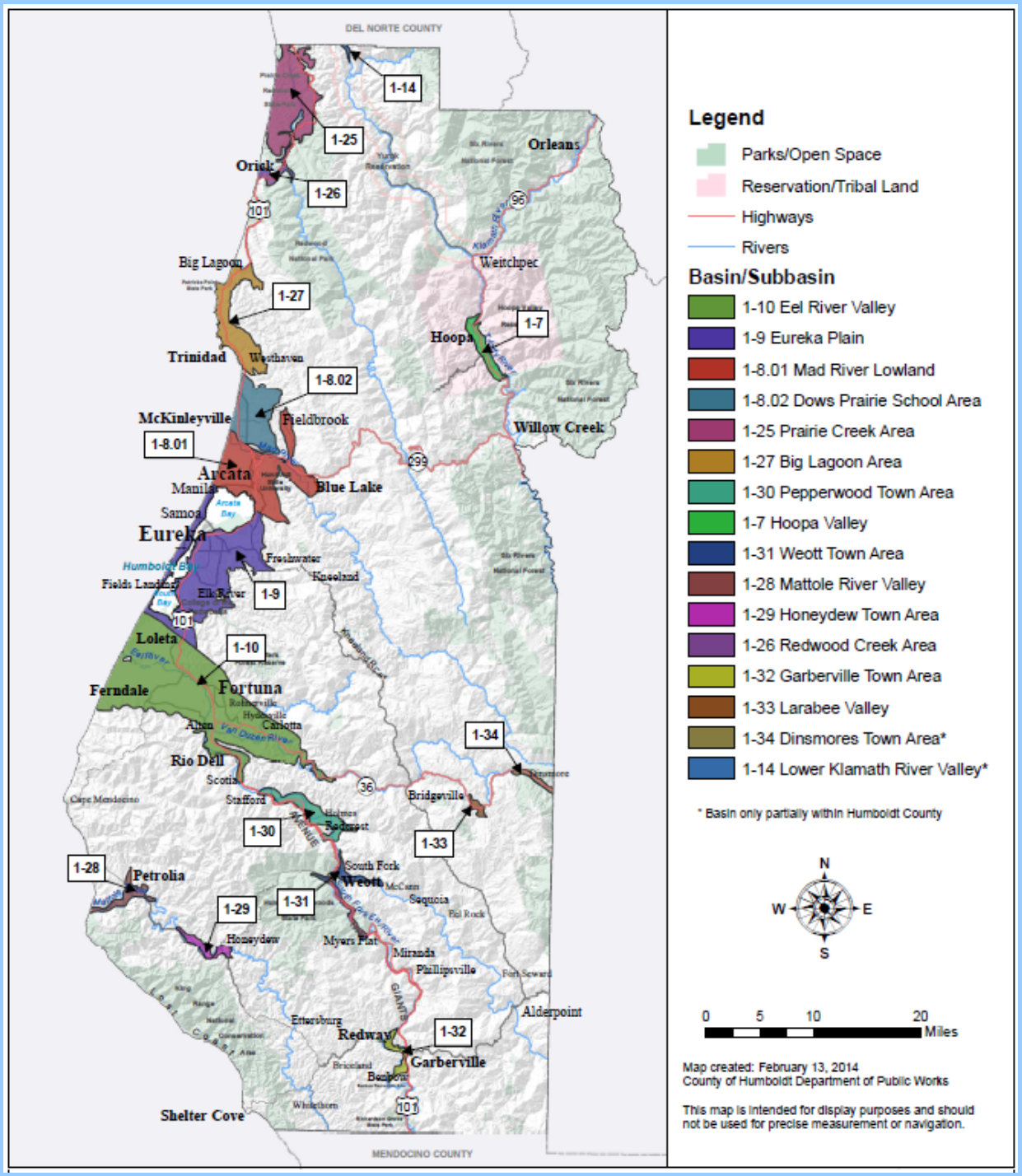
Source: USGS Circular 1139

Figure 3: Pumping effects on groundwater and streams

Humboldt County Designated Alluvial Groundwater Basins and Sub-basins



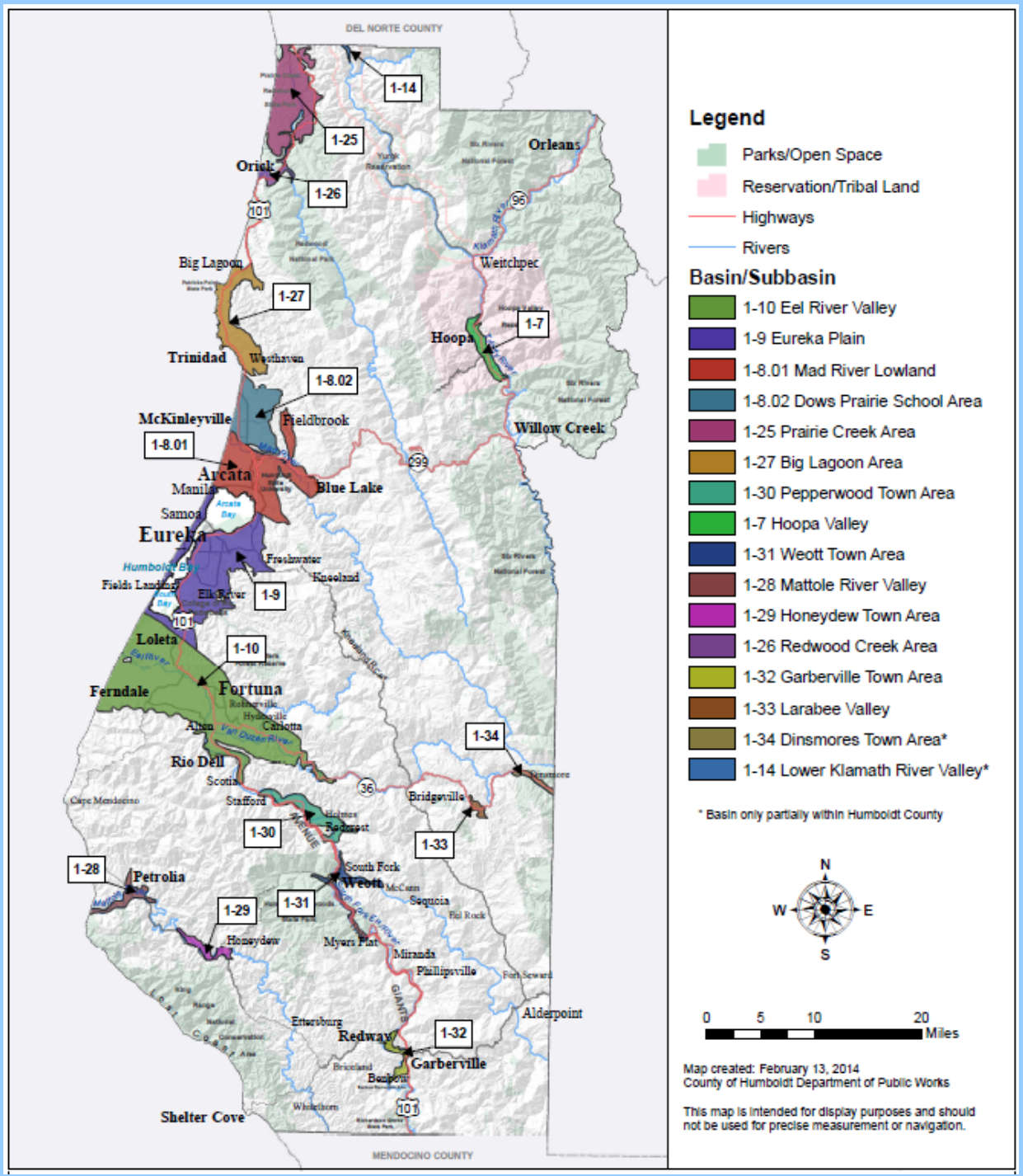
Source:
DWR Bulletin 118



Humboldt County Designated Alluvial Groundwater Basins and Sub-basins

Source:
DWR Bulletin 118

Groundwater uses:
- Irrigation
- Public supply
- Industrial
- Residential



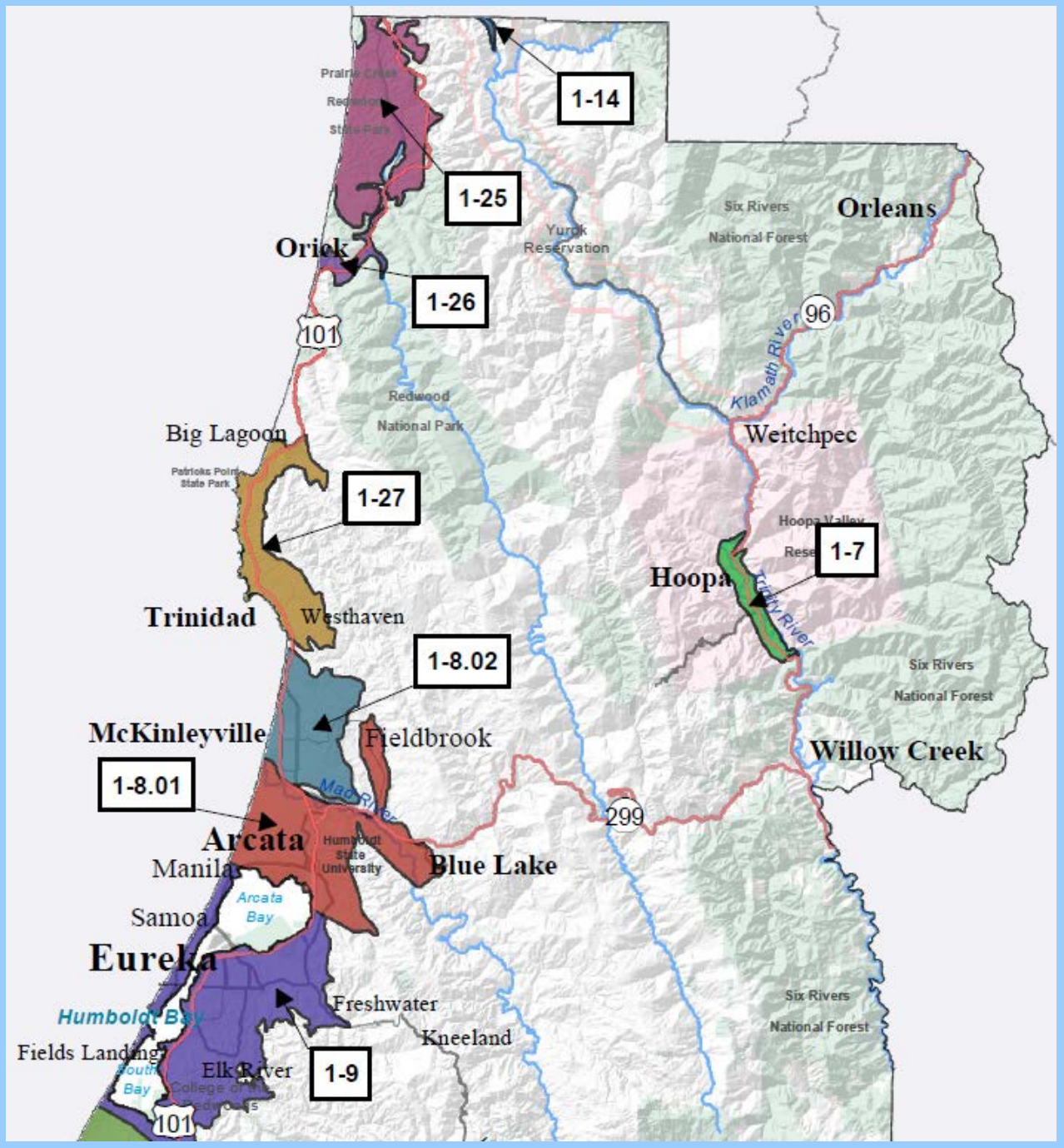
Humboldt County Designated Alluvial Groundwater Basins and Sub-basins

Source:
DWR Bulletin 118

Groundwater uses:
- Irrigation
- Public supply
- Industrial
- Residential

Excessive use can cause undesirable results:
- Overdraft
- Failed wells
- Deteriorated water quality
- Environmental damage
- Land subsidence
- Saltwater intrusion

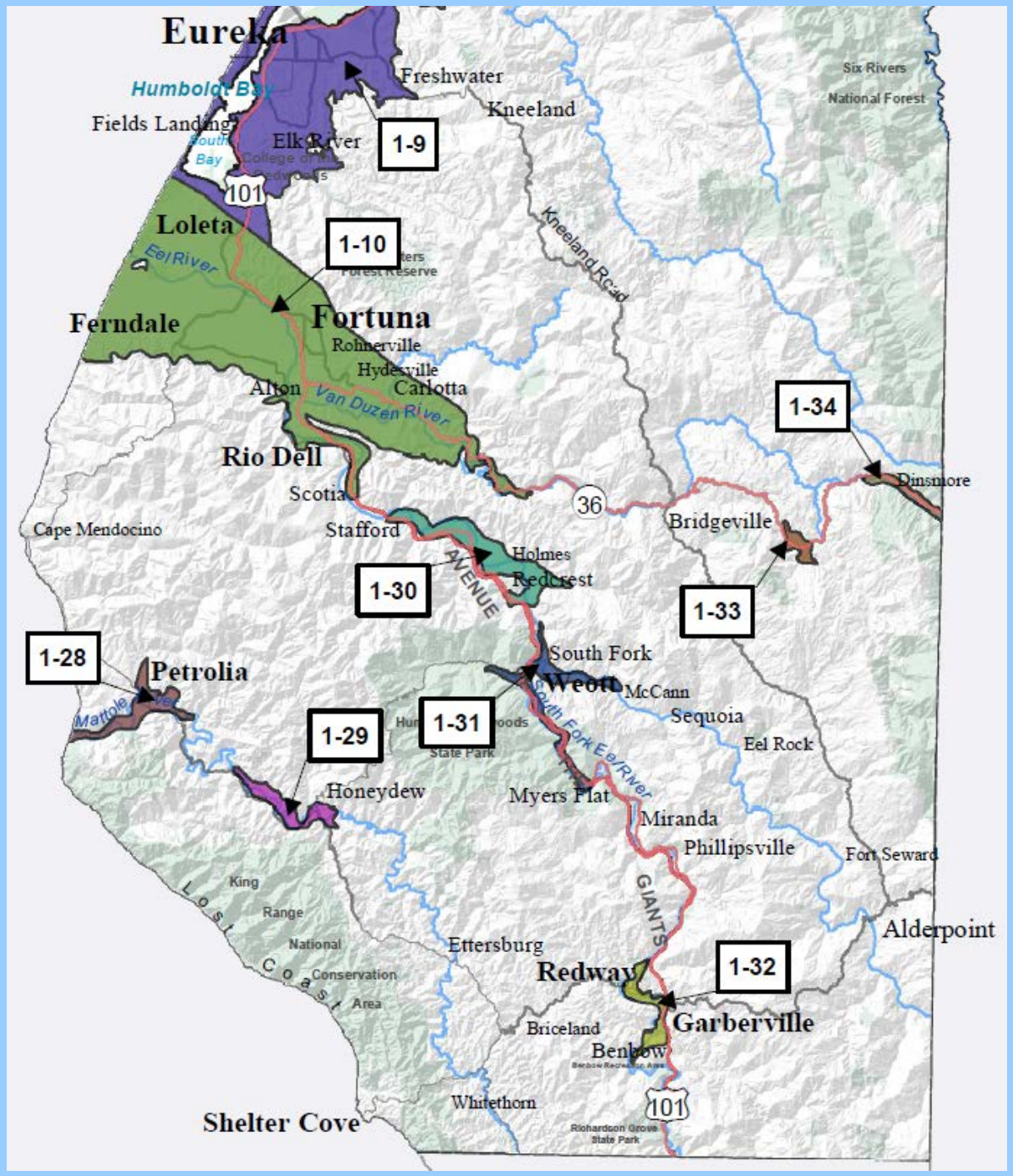
Northern Humboldt Co. Designated Alluvial Groundwater Basins and Sub-basins



Basin/Subbasin

- 1-10 Eel River Valley
- 1-9 Eureka Plain
- 1-8.01 Mad River Lowland
- 1-8.02 Dows Prairie School Area
- 1-25 Prairie Creek Area
- 1-27 Big Lagoon Area
- 1-30 Pepperwood Town Area
- 1-7 Hoopa Valley
- 1-31 Weott Town Area
- 1-28 Mattole River Valley
- 1-29 Honeydew Town Area
- 1-26 Redwood Creek Area
- 1-32 Garberville Town Area
- 1-33 Larabee Valley
- 1-34 Dinsmores Town Area*
- 1-14 Lower Klamath River Valley*

* Basin only partially within Humboldt County



Southern Humboldt Co. Designated Alluvial Groundwater Basins and Sub-basins

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- 1-9 Eureka Plain
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- 1-25 Prairie Creek Area
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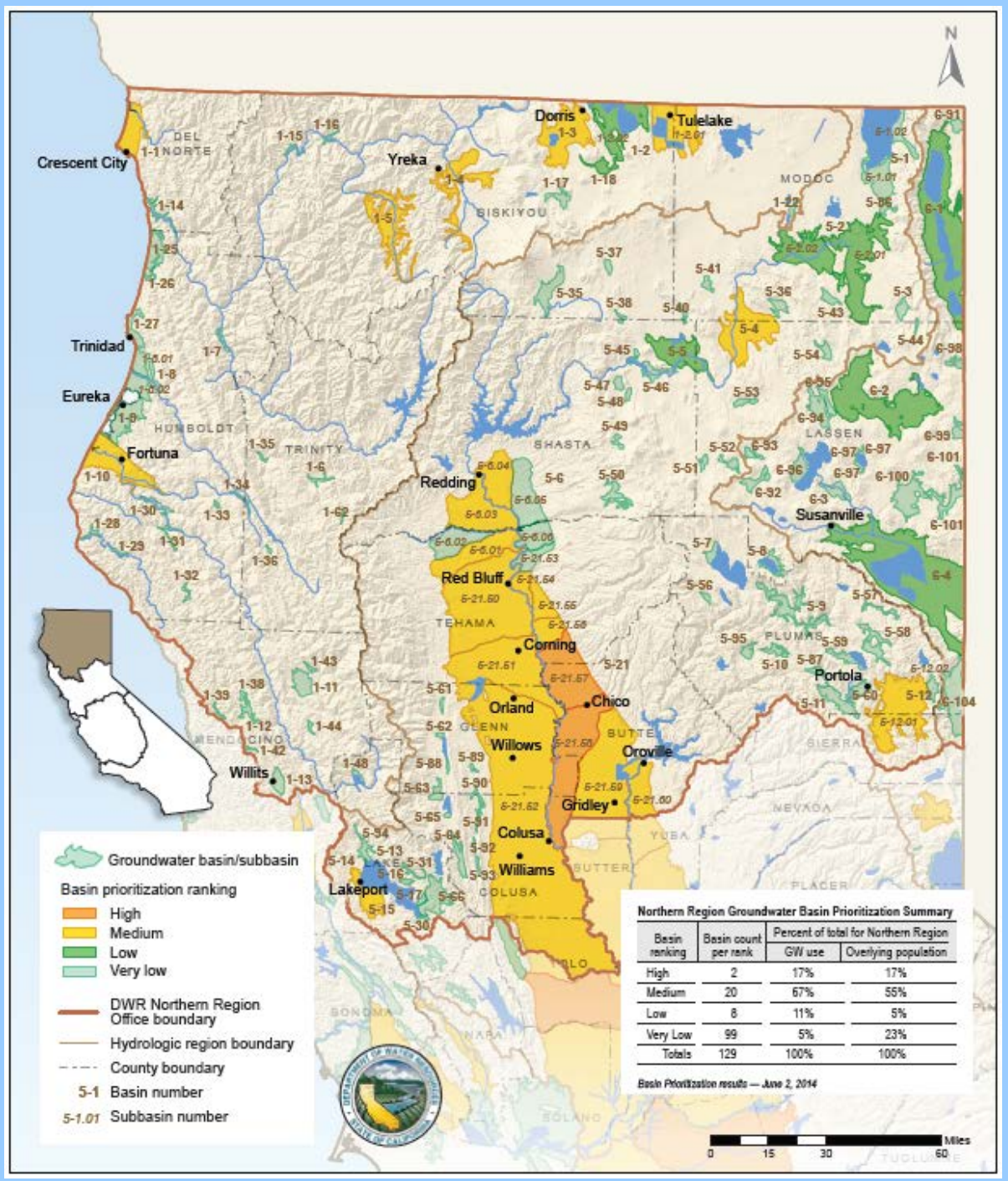


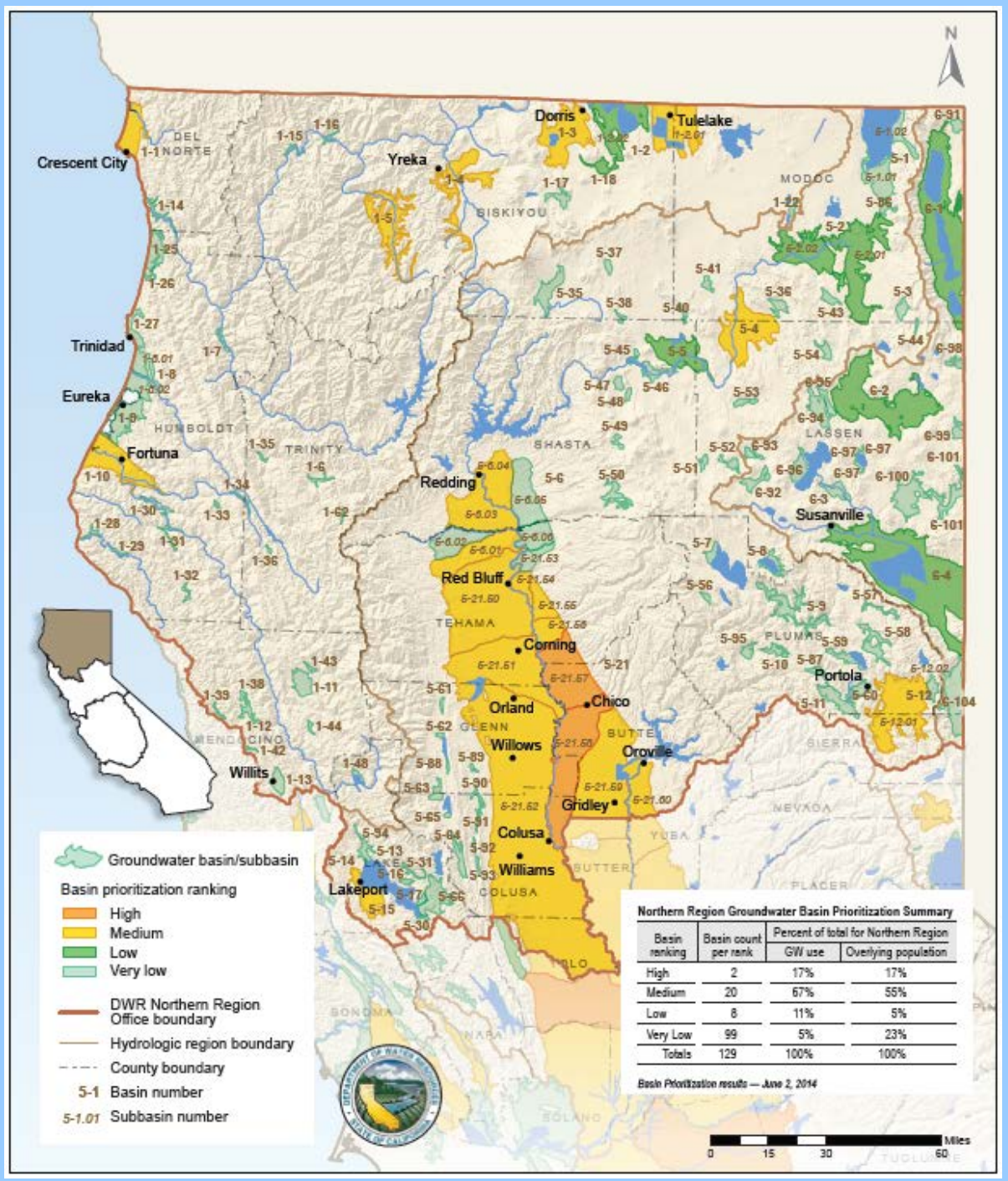
Northern California Ranking of Groundwater Basin Importance

Source:
DWR Bulletin 118

Groundwater basin/subbasin

Basin prioritization ranking

- High
- Medium
- Low
- Very low



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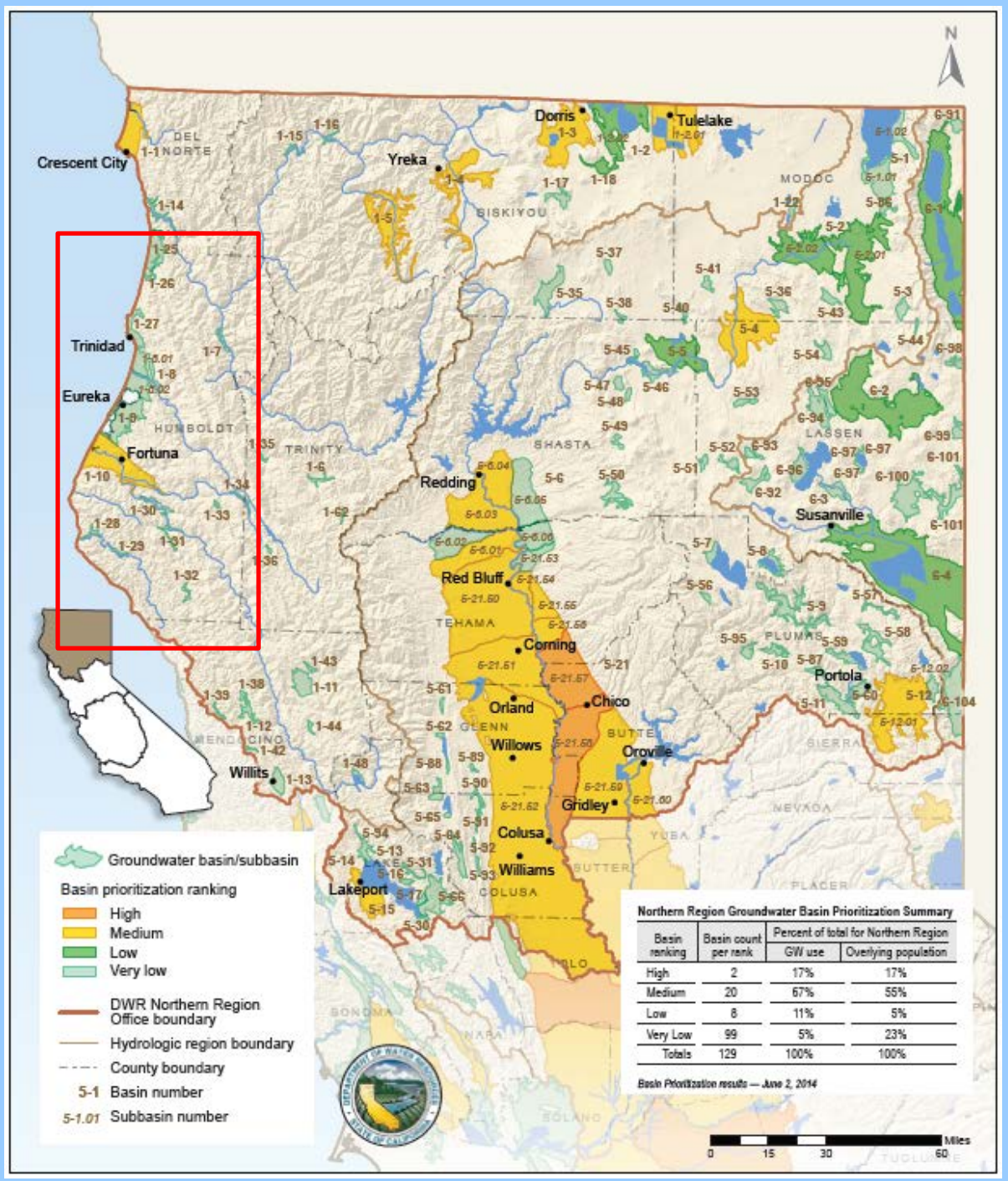
Criteria:
Eight factors including irrigated acreage and reliance as primary water source



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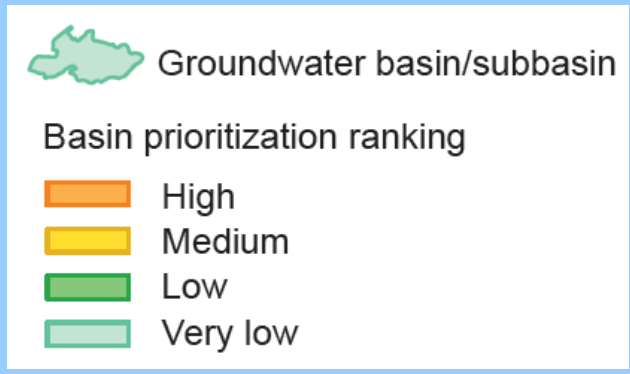

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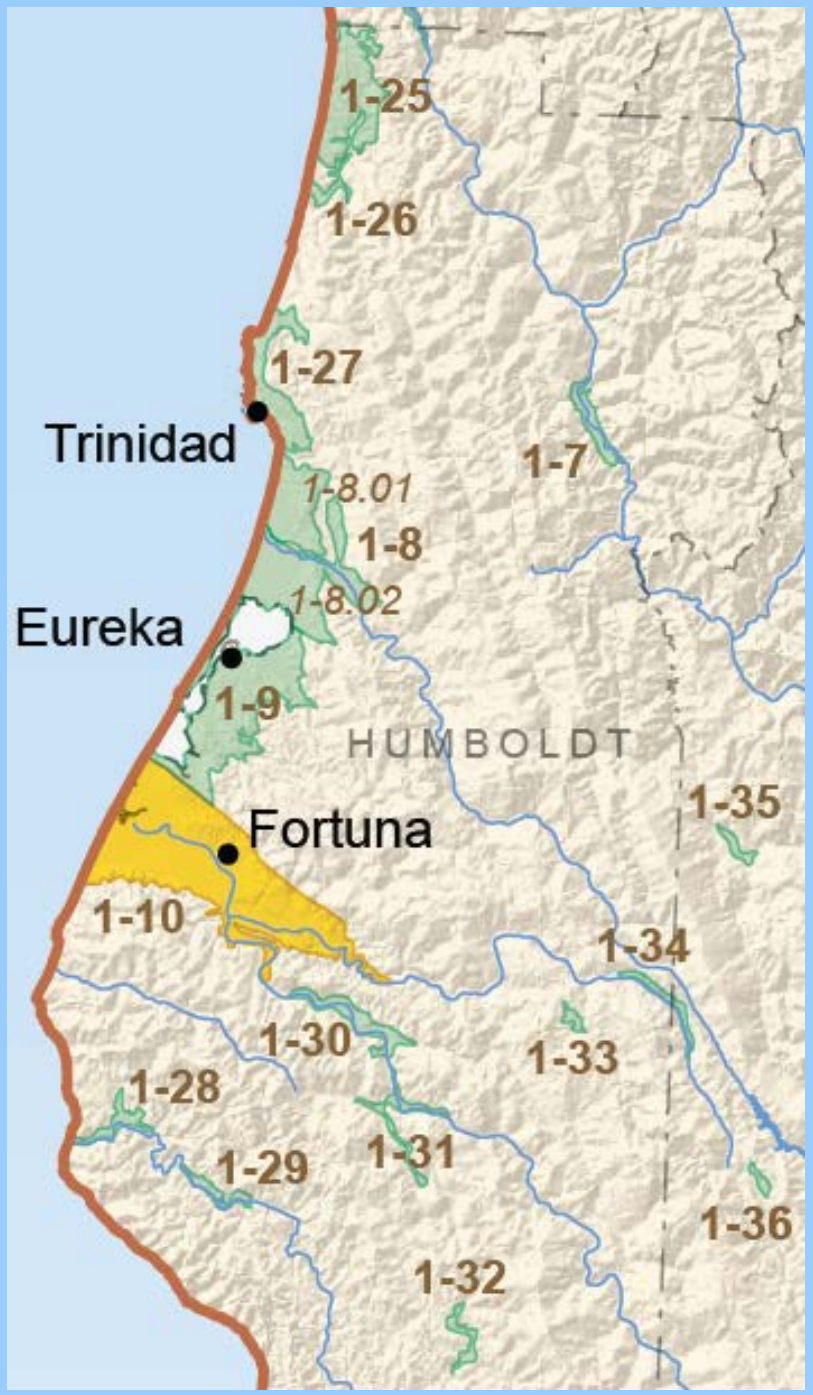

Humboldt County
Basin Prioritization Ranking

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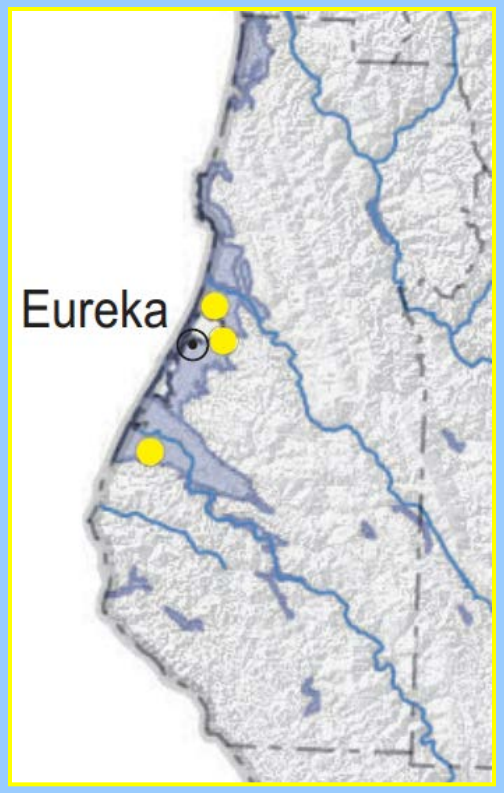
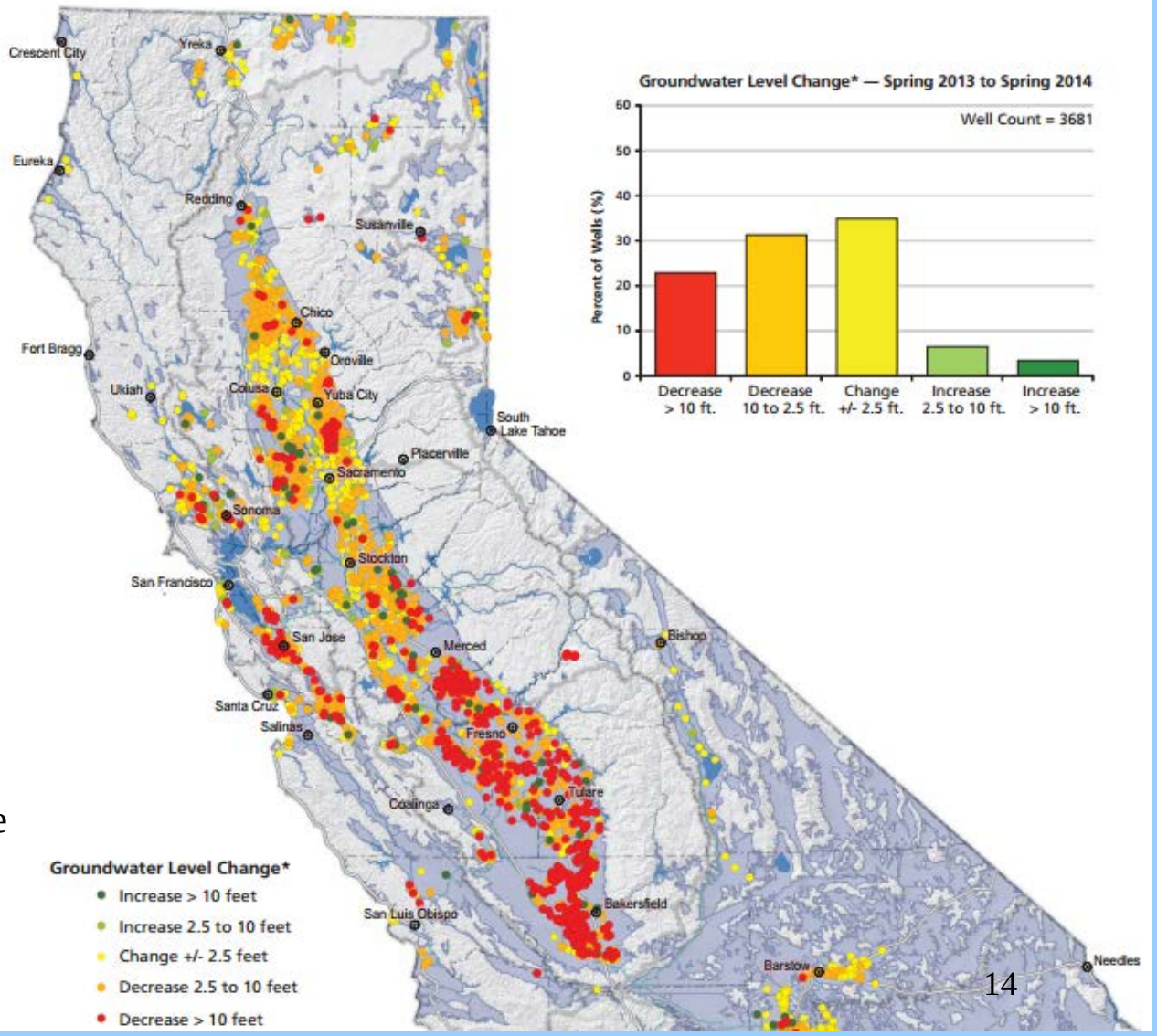
Change in Groundwater Levels – Spring 2013 to Spring 2014

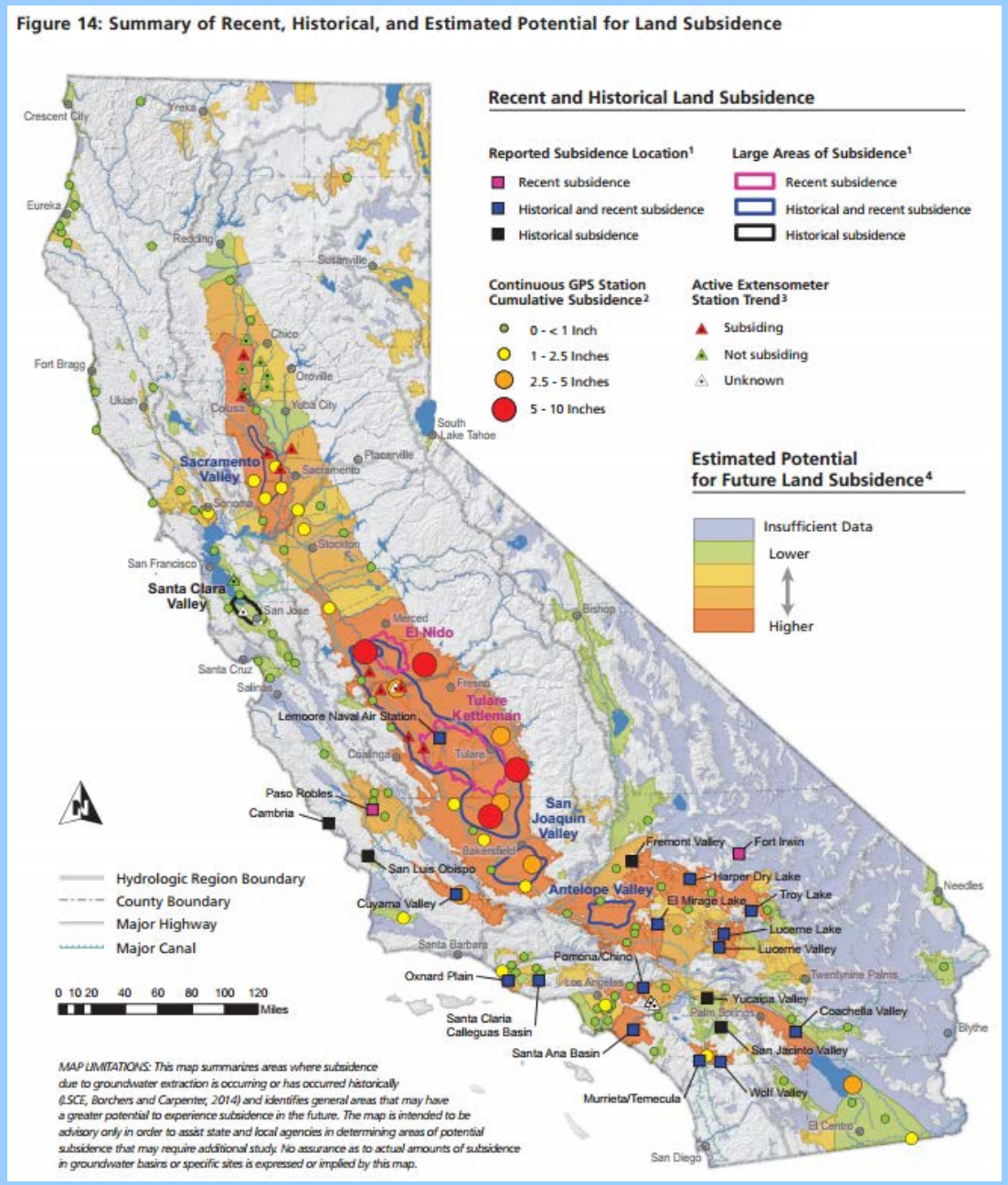


Source:
Public Update for Drought Response
(DWR, Nov. 2014)

Figure 5: Change in Groundwater Levels in Wells - Spring 2013 to Spring 2014



Estimated Potential for Land Subsidence



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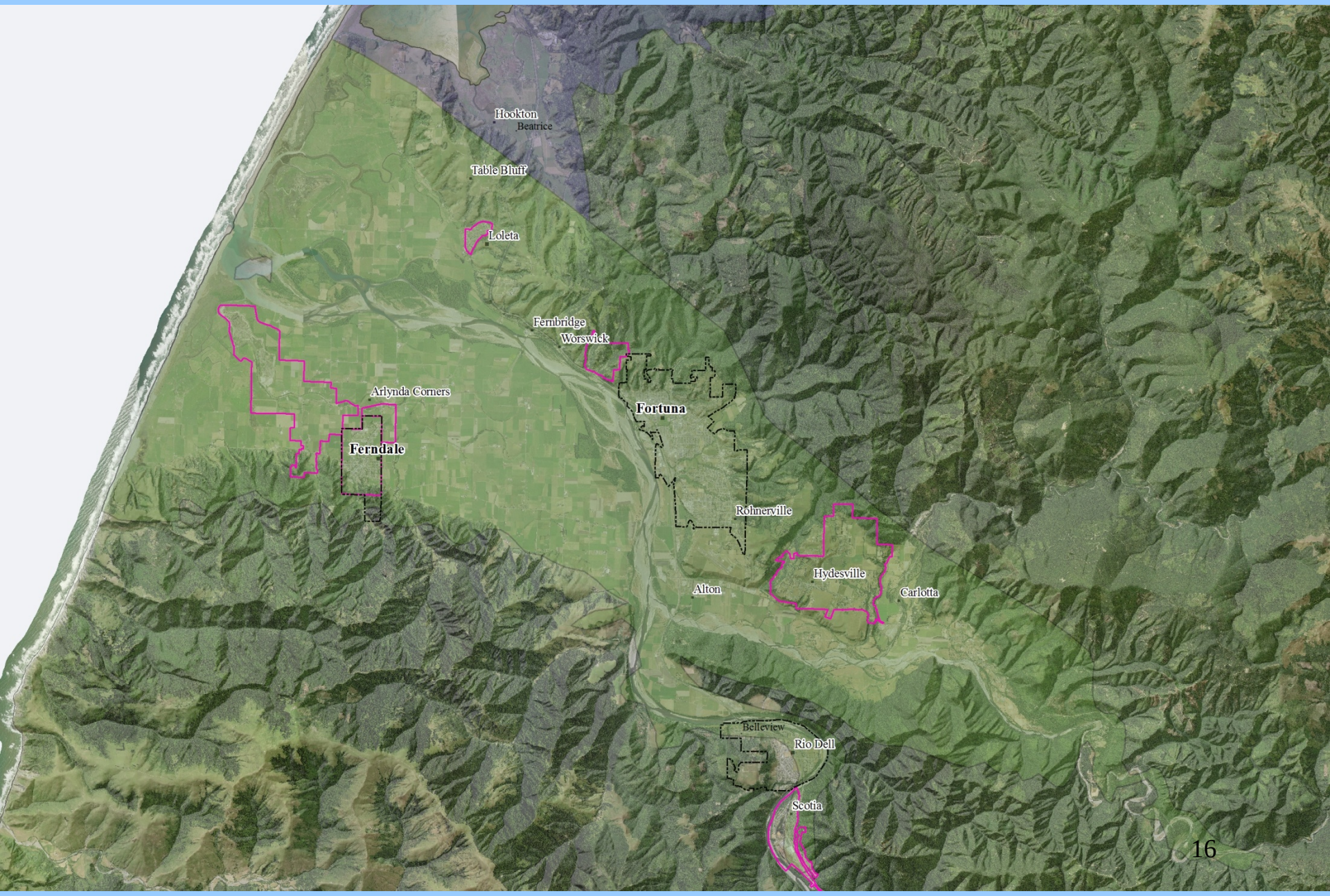
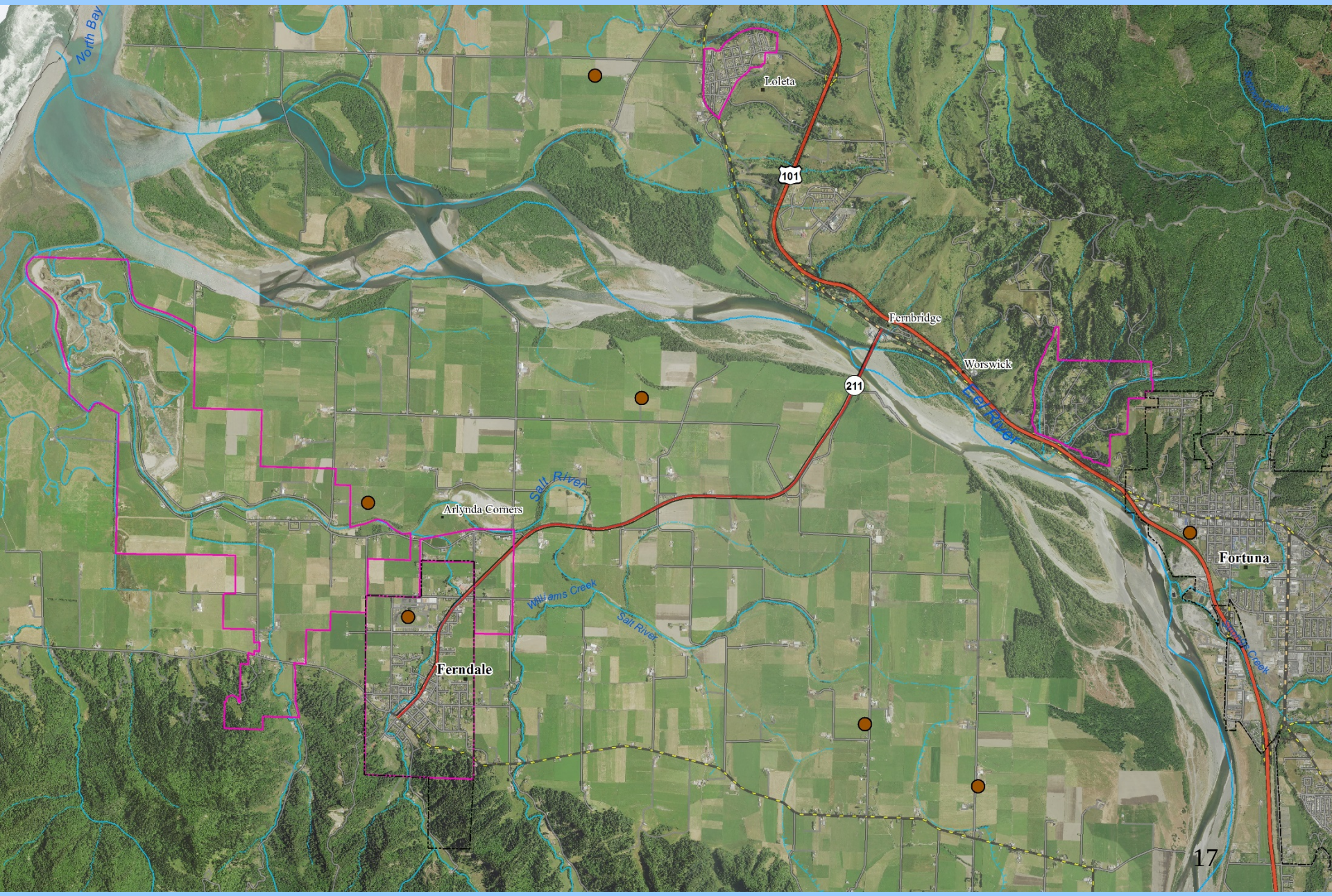
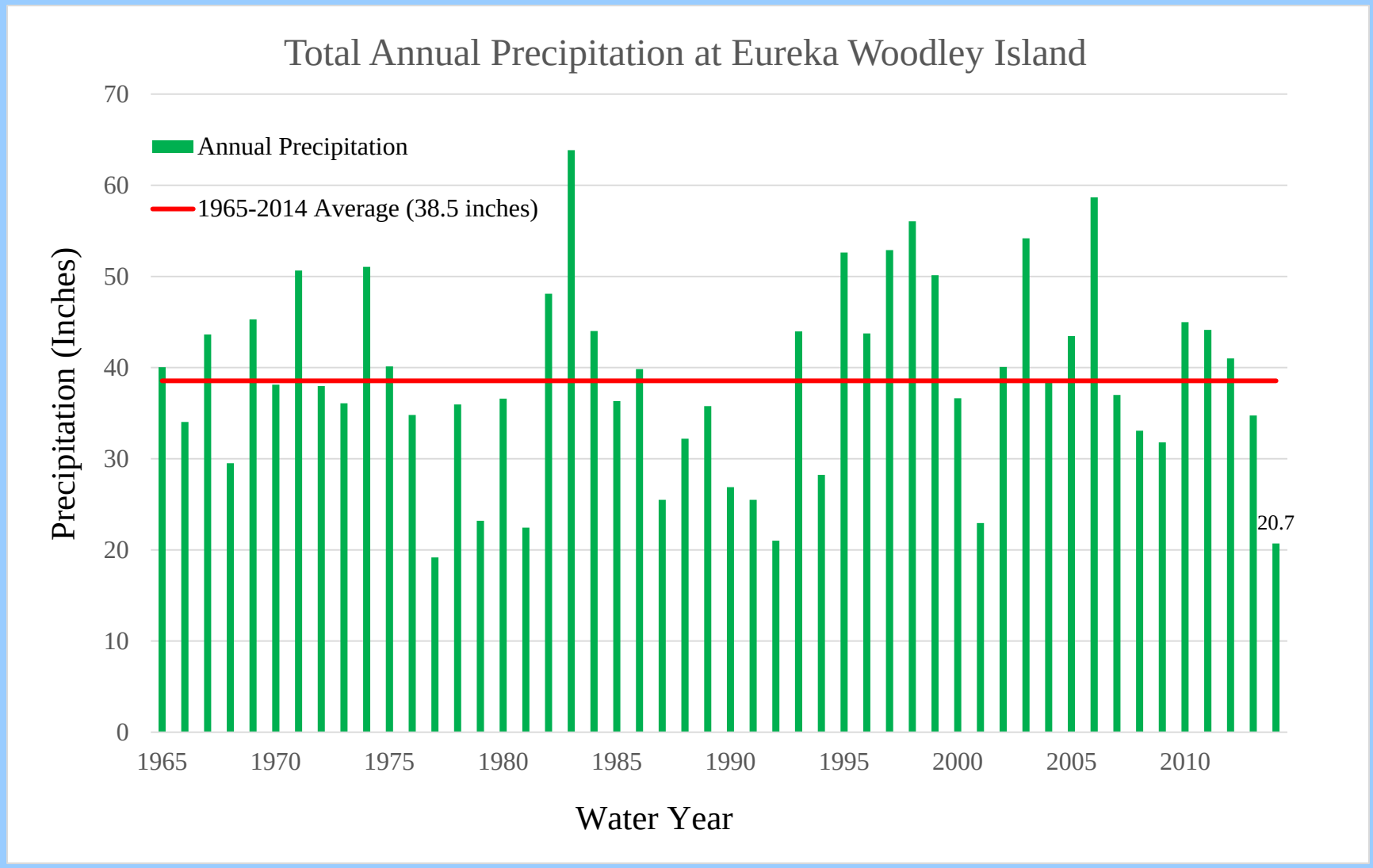
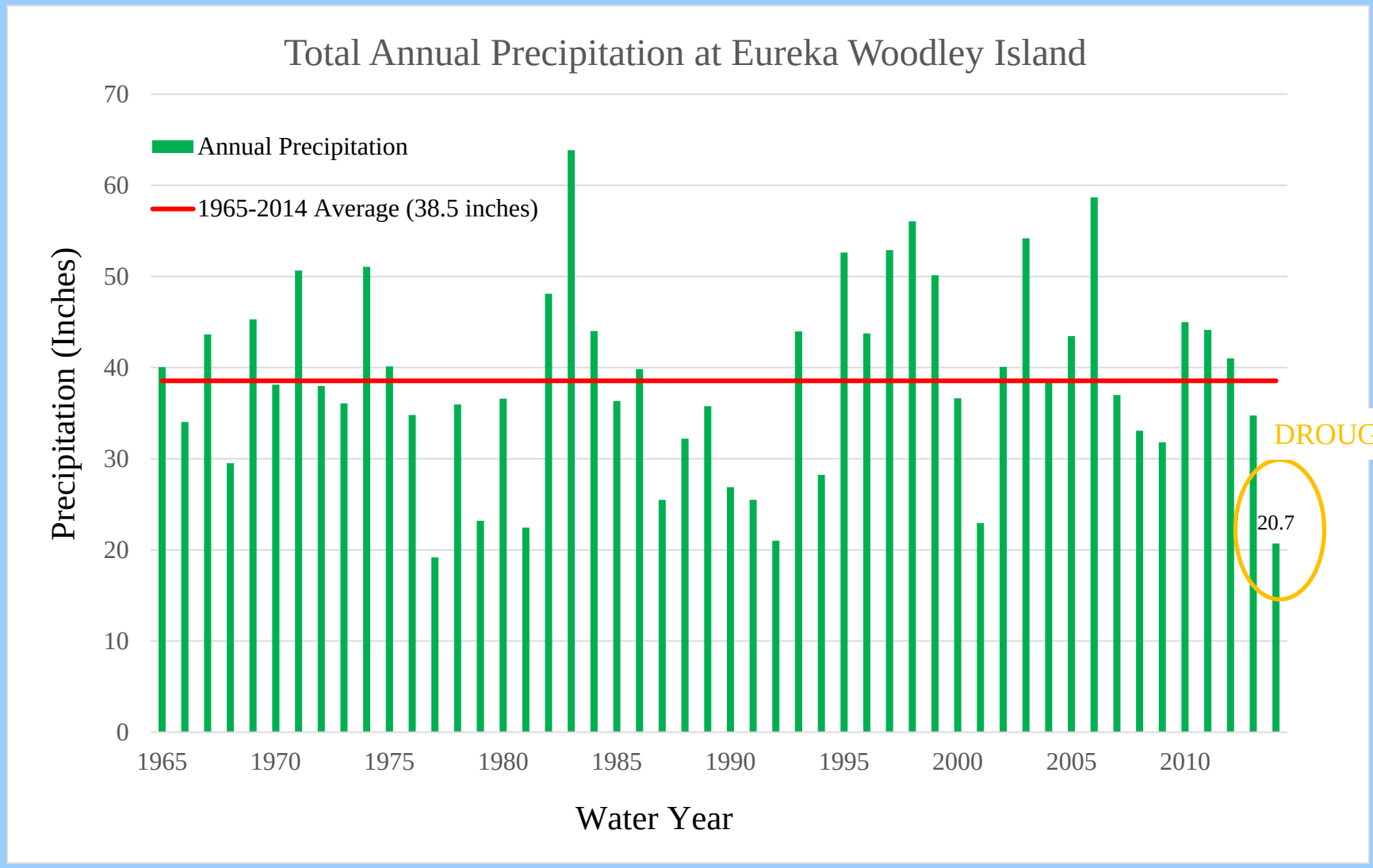
Eel River Valley Groundwater Basin



DWR Monitoring Wells in Eel River Basin




Total Annual Precipitation at Eureka Woodley Island
Annual Precipitation
1965-2014 Average (38.5 inches)
Precipitation (Inches)
70
60
50
40
30
20
10
0
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
20.7
Water Year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1970
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1990
1995
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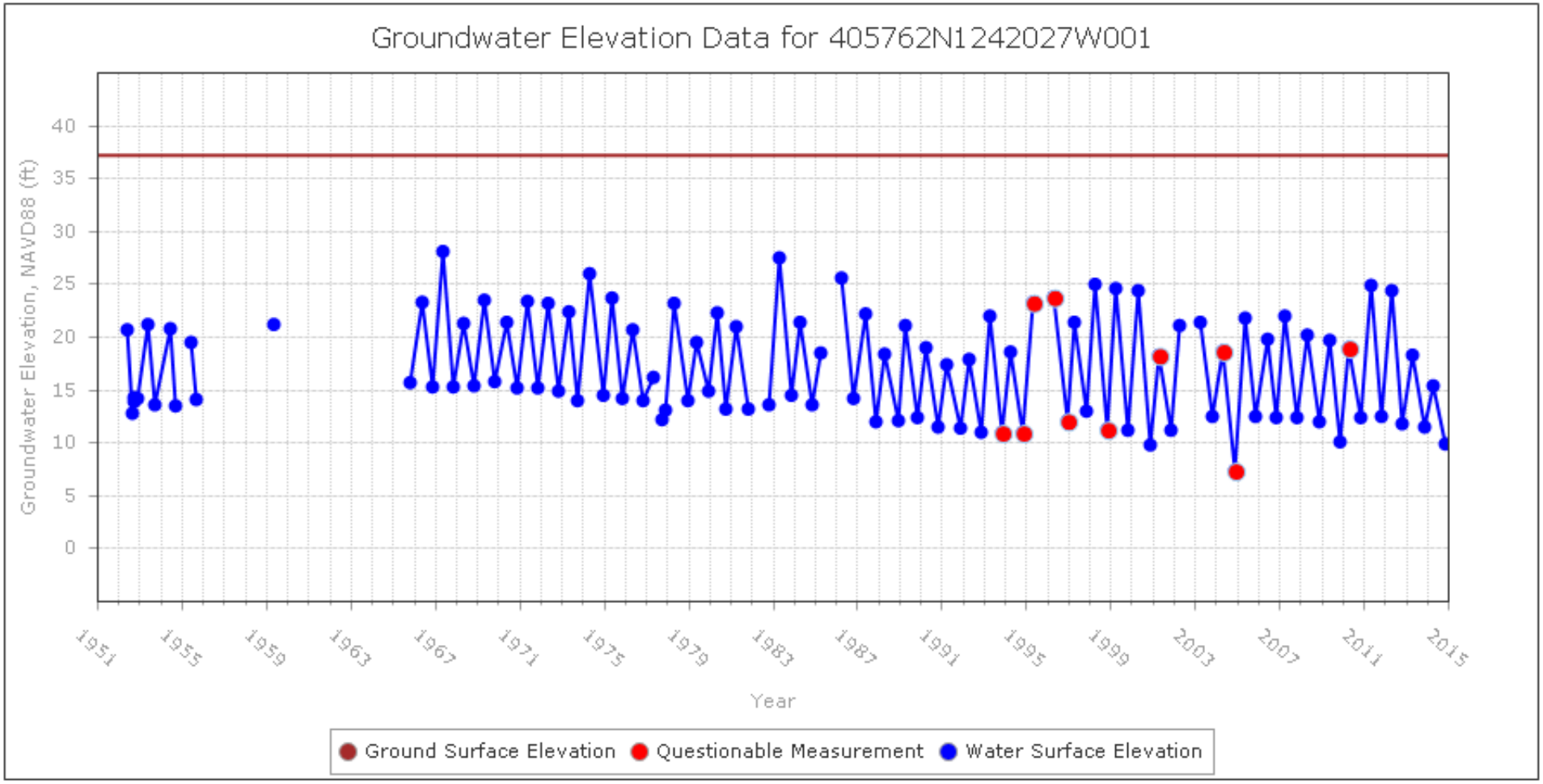
2010
Water Year
DROUGHT
20.7

Well near Waddington Road, Eel River Valley



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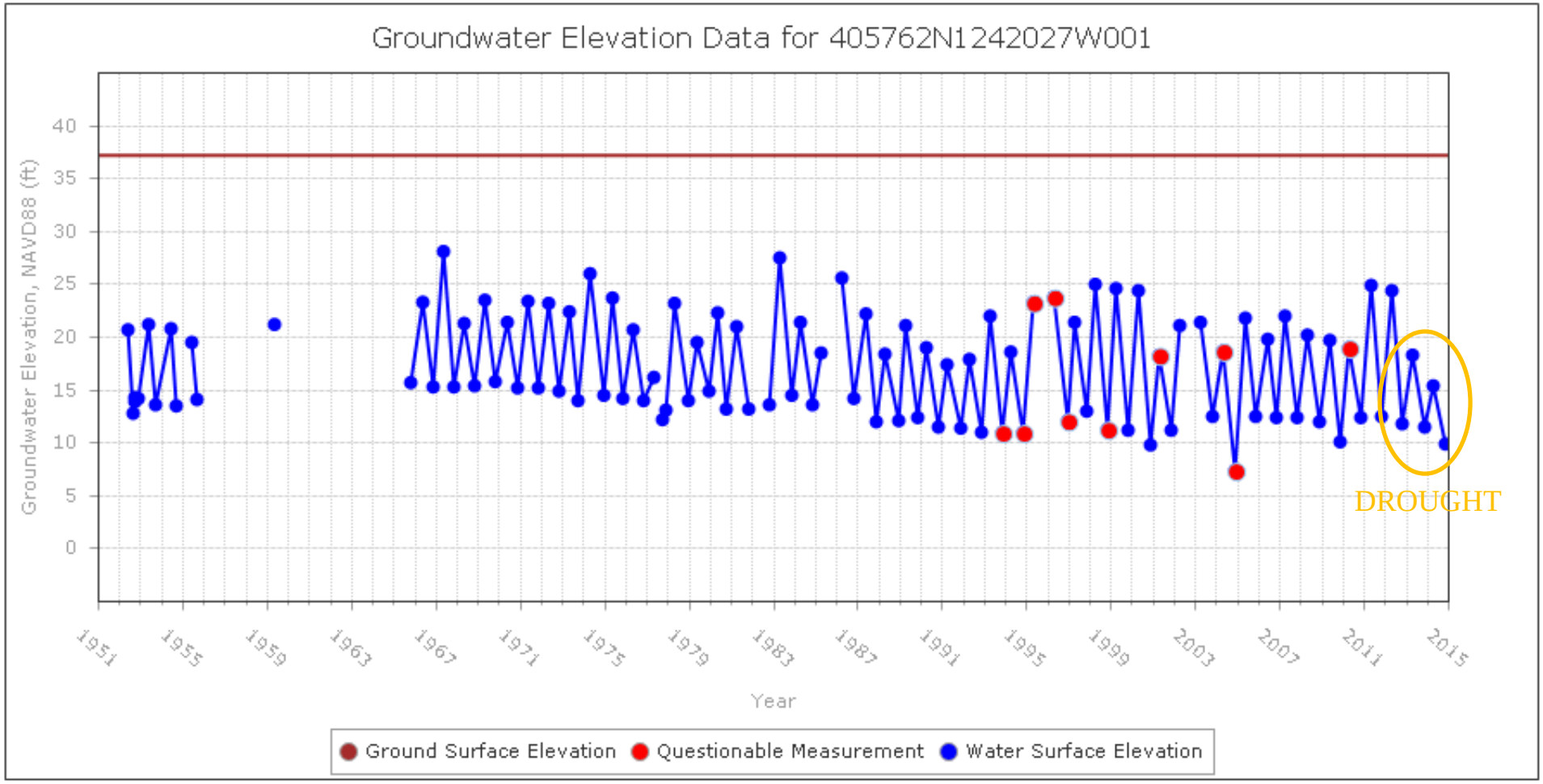

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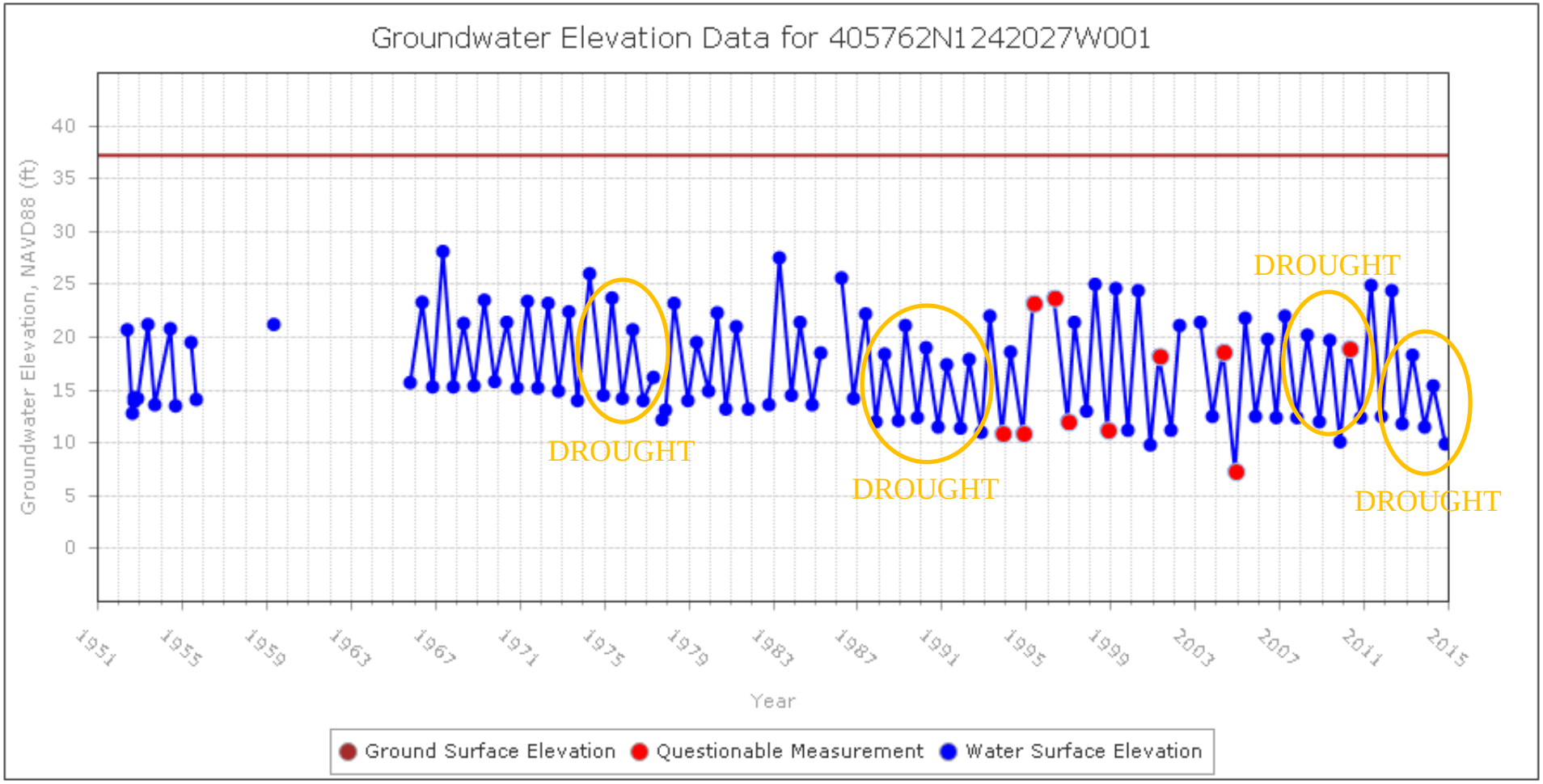
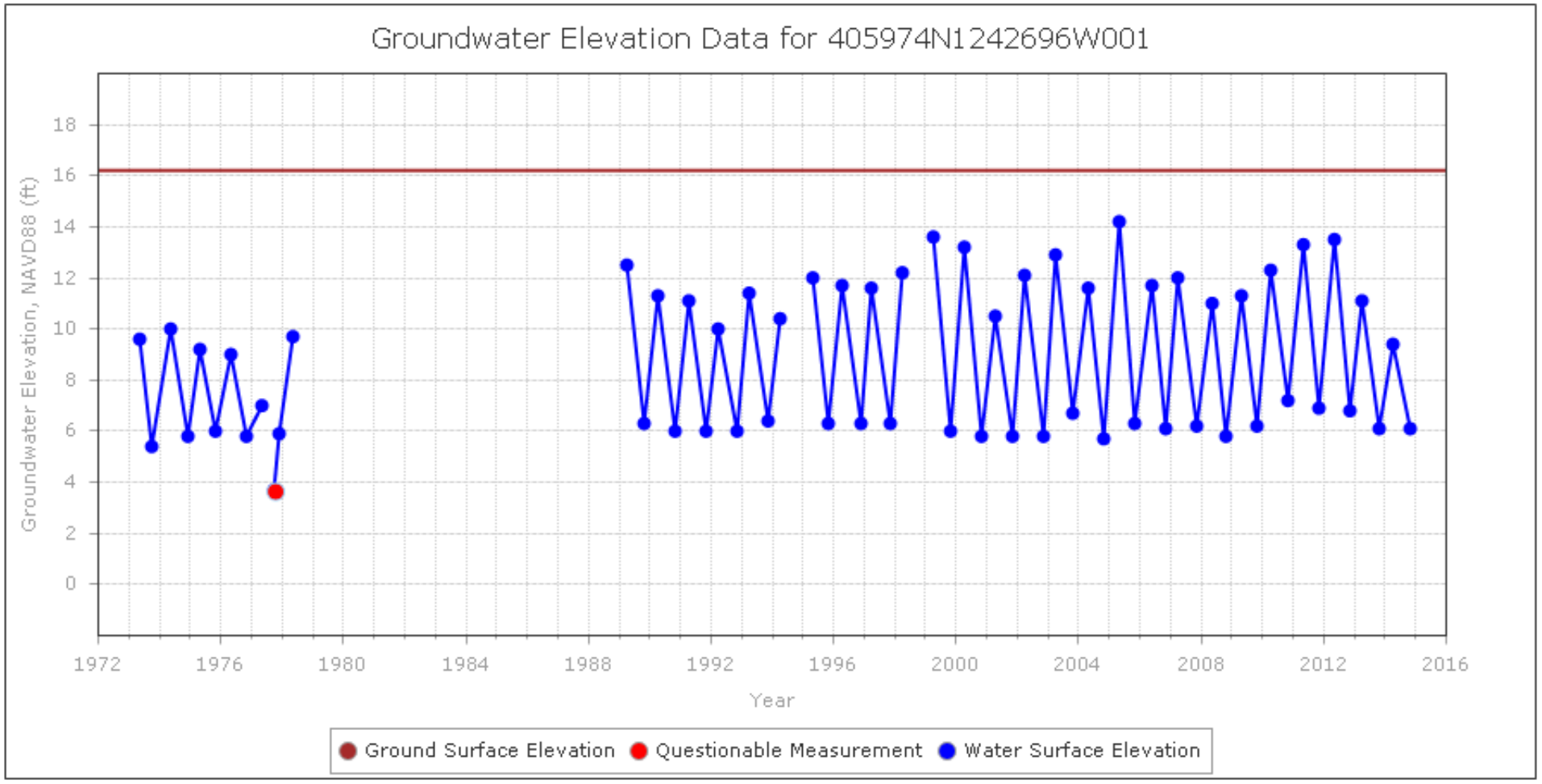
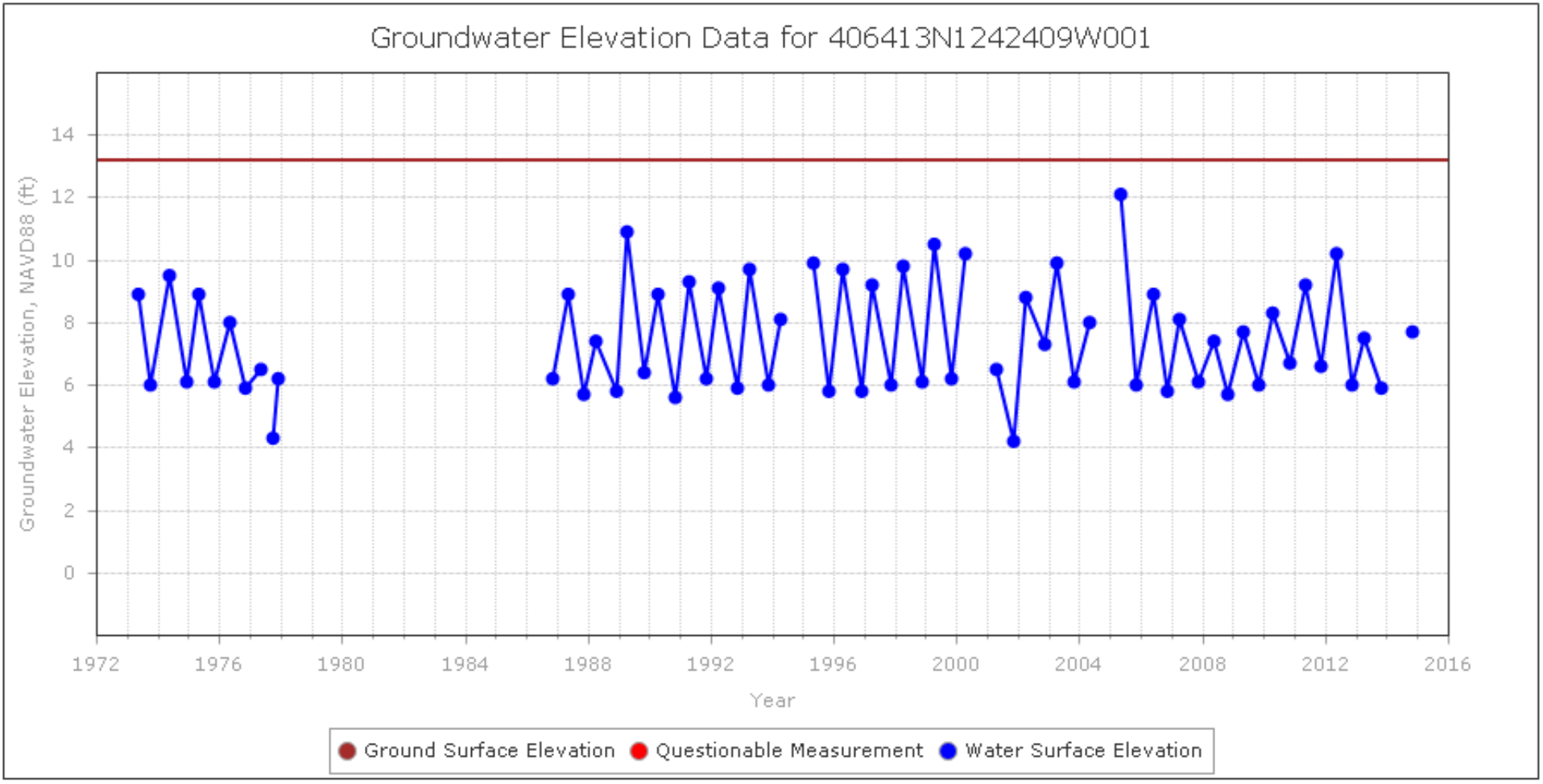


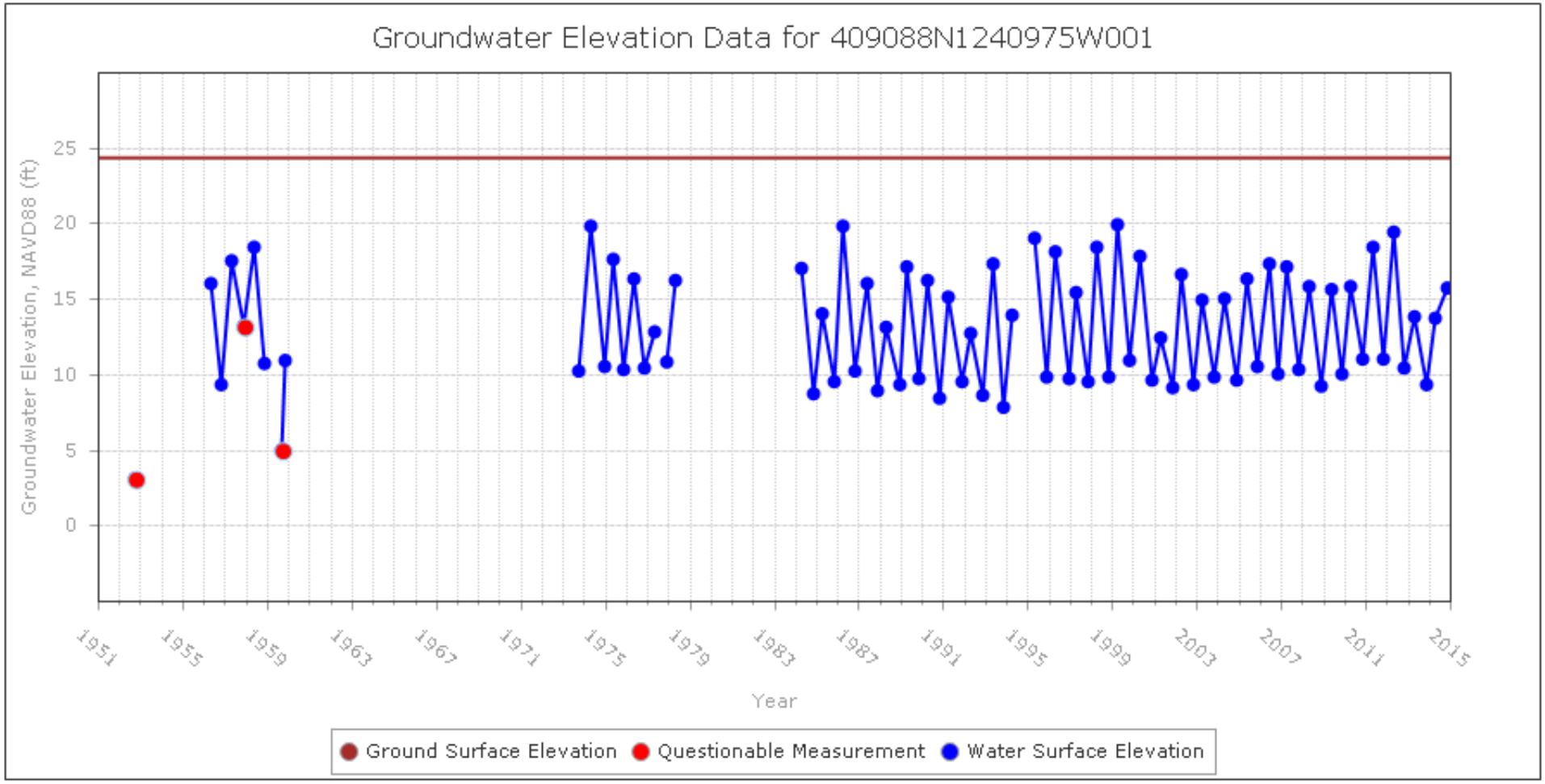
Well near Dillon Road, Eel River Valley



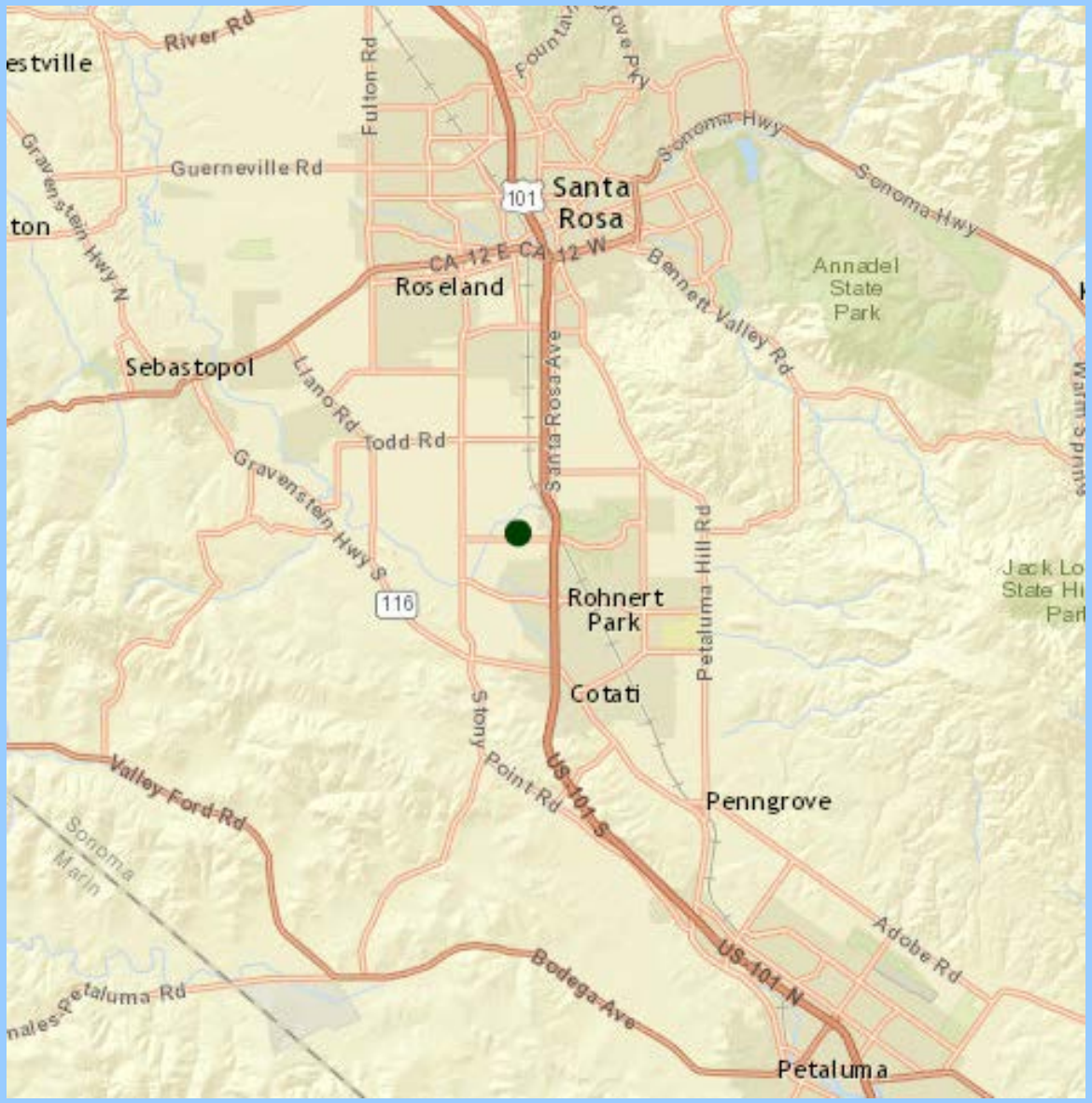
Well near Cannibal Island Road, Eel River Valley



Well near Mad River Road, Mad River Valley



Example of overdraft:
Well near Rohnert Park in Santa Rosa Plain Watershed



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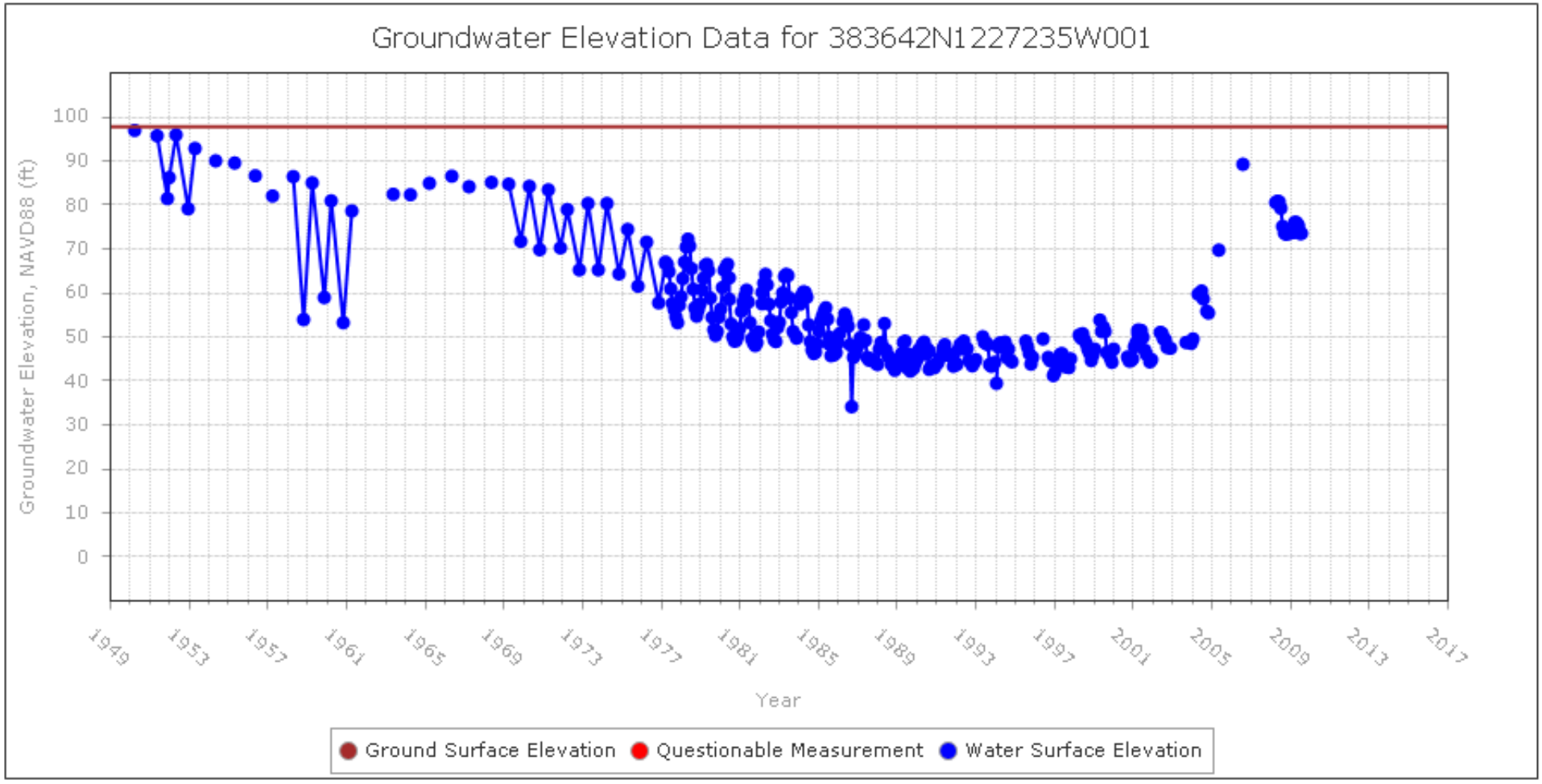

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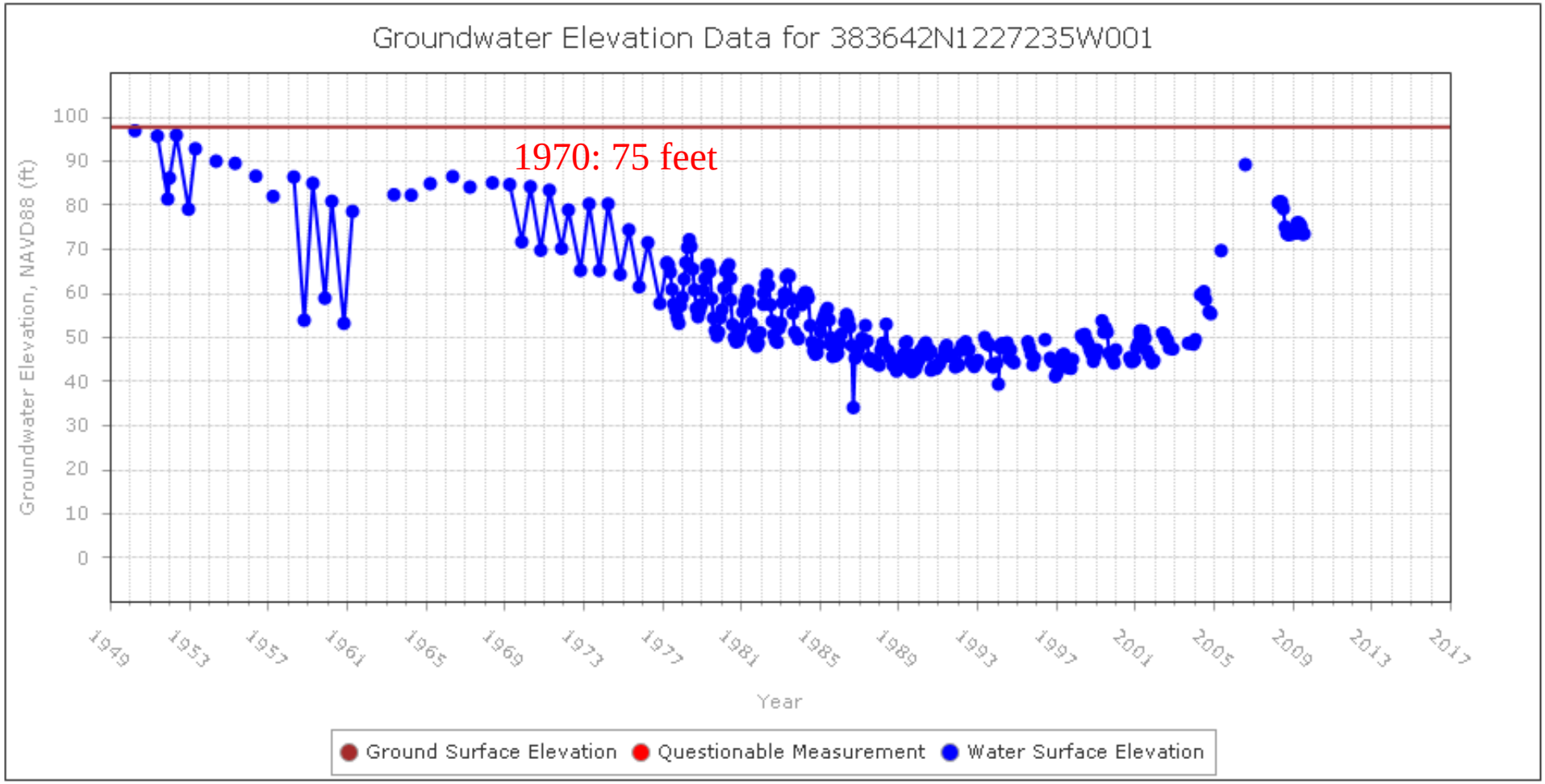

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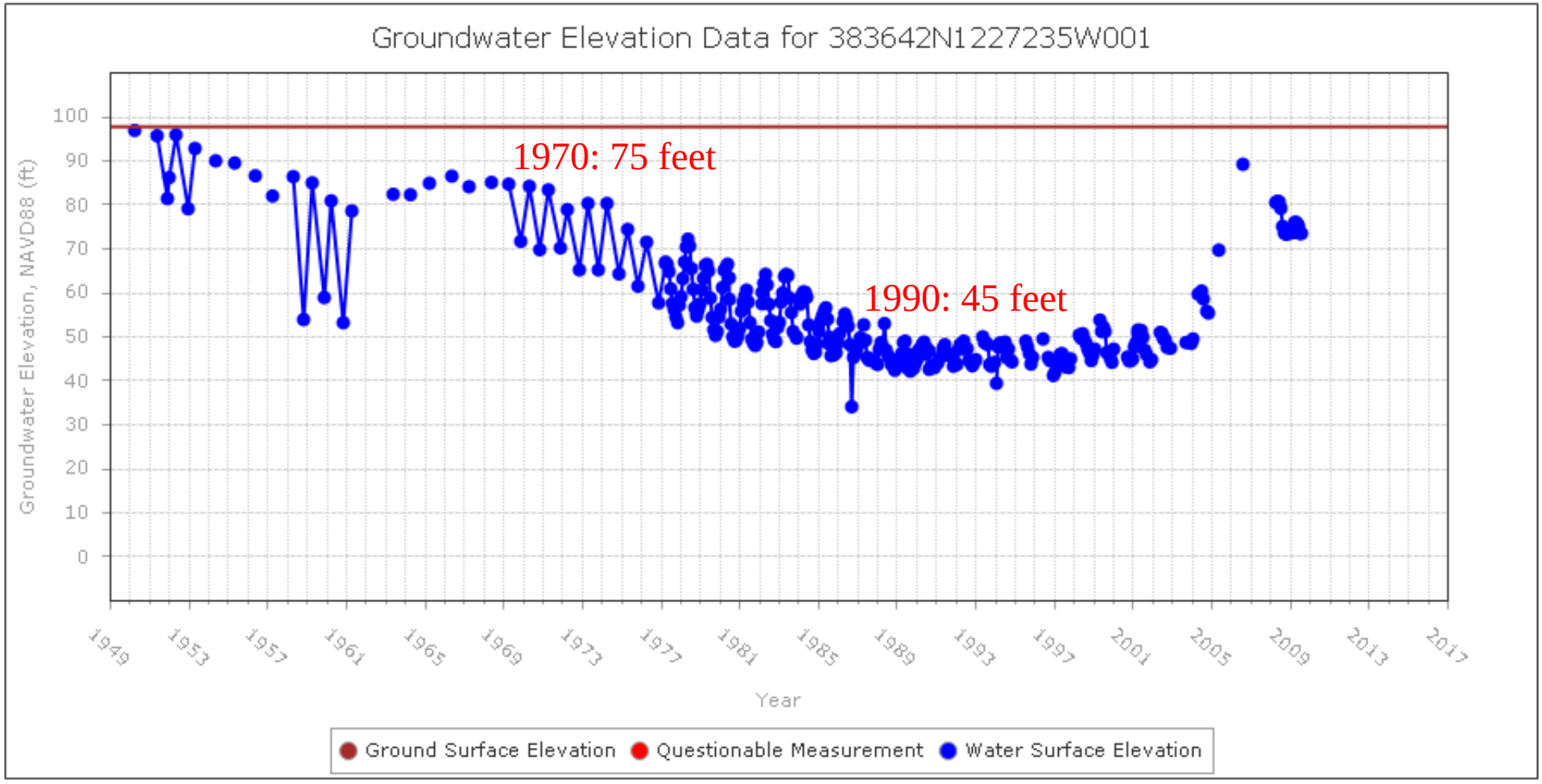

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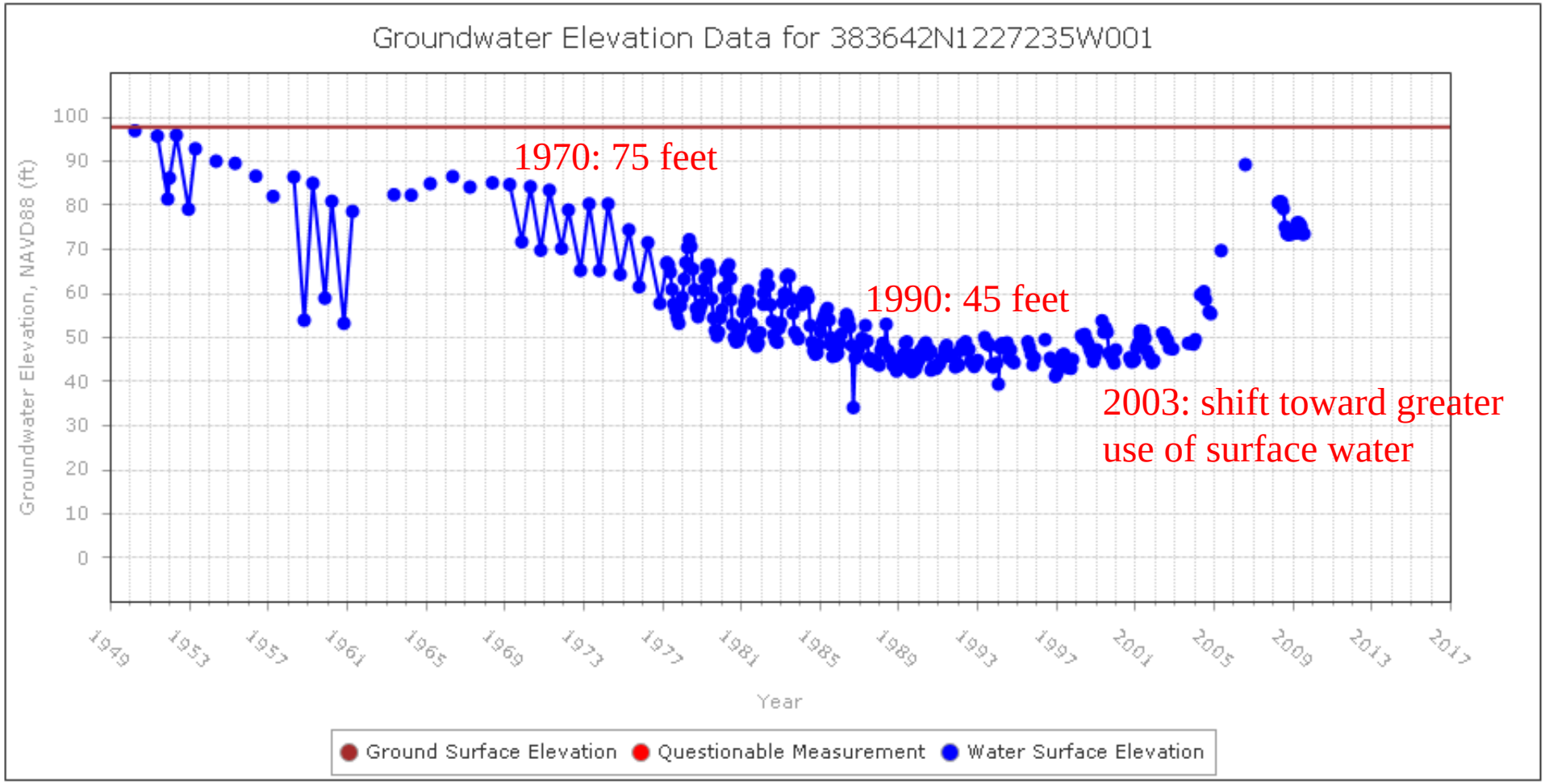
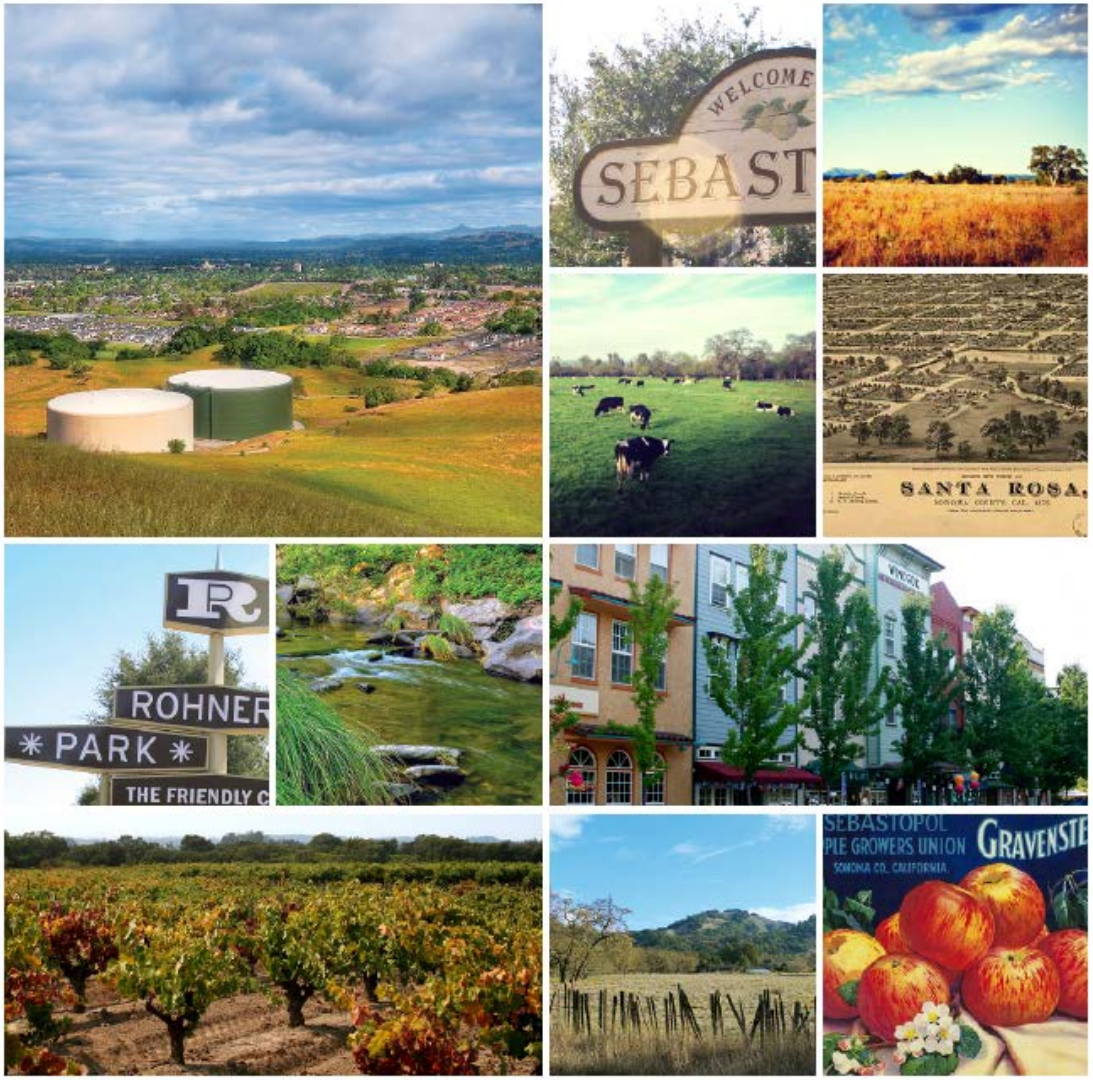


Final Draft Santa Rosa Plain Watershed Groundwater Management Plan

October 2014 | Prepared by the Santa Rosa Plain Basin Advisory Panel



Water Agency Board of Directors:

- Susan Gorin, 1st District
- David Rabbitt, 2nd District
- Shirlee Zane, 3rd District
- Mike McGuire, 4th District
- Efren Carrillo, 5th District

Santa Rosa Plain Groundwater Management Plan Basin Advisory Panel:

- Garrett Broughton (alternate Toni Bertolero), Town of Windsor
- Michael Burns, Resident Santa Rosa
- Mark Calhoon, Fircrest Mutual Water Company
- Elizabeth Cargay, Well Owner & Foothills of Windsor Homeowners Association
- Margaret DiGenova, Cal American Water Company
- Rue Furch, Sebastopol Water Information Group (SWIG) and Sierra Club
- Joe Gaffney, Sonoma County Alliance
- Dawna Gallagher, Santa Rosa Plain Well Owner & Clean Water Sonoma Marin
- Maureen Geary, Federated Indians of Graton Rancheria
- Norman Gilroy, Community Alliance of Family Farmers
- Edward Grossi, Sweet Lane Wholesale Nursery
- John Guardino, Laguna de Santa Rosa Foundation
- Kara Heckert (alternate Valerie Minton), Sonoma Resource Conservation District
- Jay Jasperse, Sonoma County Water Agency
- Bill Keene, Sonoma County Agricultural Preservation & Open Space District
- Sue Kelly, City of Sebastopol
- Melissa Lema, Western United Dairymen's Association
- John McArthur (alternate Darrin Jenkins), City of Rohnert Park
- Gary Mickelson, California Groundwater Association
- John Nagle, Sonoma County Winegrape Commission
- Curt Nichols, Carlile Macy Landscape Architects and Civil Engineers, for the Construction Coalition
- Jane Nielson, Sonoma County Water Coalition and O.W.L. Foundation
- Damien O'Bid, City of Cotati
- Pete Parkinson (retired), County of Sonoma
- Daniel Sanchez, North Bay Association of Realtors
- Tito Sasaki, Sonoma County Farm Bureau
- Rocky Vogler (alternate Jennifer Burke), City of Santa Rosa

Technical Advisory Committee:

- Bob Anderson, United Wine Growers
- Garrett Broughton, Town of Windsor
- Michael Burns, ESA | Water
- Mark Calhoon, Fircrest Mutual Water Company
- Kevin Cullinen, Sonoma Resource Conservation District
- Brock Dolman, Occidental Arts & Ecology Center
- Joe Gaffney, Sonoma County Alliance
- Dawna Gallagher, Santa Rosa Plain Well Owner & Clean Water Sonoma Marin
- Lloyd Iversen, Santa Rosa Plain Well Owner
- Jay Jasperse, Sonoma County Water Agency
- Lisa Micheli, Pepperwood Foundation
- Gary Mickelson, California Groundwater Association
- Jane Nielson, Sonoma County Water Coalition
- Matt O'Connor, O'Connor Environmental
- Rocky Vogler, City of Santa Rosa

Interested Parties:
In addition to the Panel and Technical Advisory Committee, many members of the community participated in meetings and attended community forums on a regular basis, contributing to and reviewing the Groundwater Management Plan.

Staff to the Panel:
Marcus Trotta, Project Manager - Sonoma County Water Agency
Tim Parker, Technical Consultant – Parker Groundwater
Gina Bartlett, Facilitator - Center for Collaborative Policy
Marci DuPraw, Facilitator - Center for Collaborative Policy
Rich Wilson, Facilitator - Center for Collaborative Policy

DWR Staff:
Mark Nordberg – California Department of Water Resources

Prepared by:
Parker Groundwater

Groundwater-related Events Relevant to Humboldt County

1959	Technical report entitled “Geology and Ground-Water Features of the Eureka Area, Humboldt County, California” published by U.S. Geologic Survey in cooperation with California Department of Water Resources (DWR)
1975	“Bulletin 118 - California’s Groundwater” published by DWR (updated 2003)
2009	California Statewide Groundwater Elevation Monitoring (CASGEM) program created

2014 Actions

2014	Jan	Governor declared a statewide drought emergency
	June	DWR issues final prioritization for alluvial basins (High, Medium, Low, Very Low) Eel River Valley Basin is only medium-priority basin in Humboldt County (no high-priority basins)
	July	County of Humboldt designated as CASGEM monitoring entity for the county
	Sept.	Governor signed three bills forming the **Sustainable Groundwater Management Act**
	Nov.	Voters passed Proposition 1 - Water Quality, Supply, and Infrastructure Improvement Act of 2014 ($7.12 water bond)

Sustainable Groundwater Management Act

New Addition to State Water Policy:

Water Code Section 113

It is the policy of the state that groundwater resources be managed sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses. Sustainable groundwater management is best achieved locally through the development, implementation, and updating of plans and programs based on the best available science.

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Key Aspects of Sustainable Groundwater Management Act

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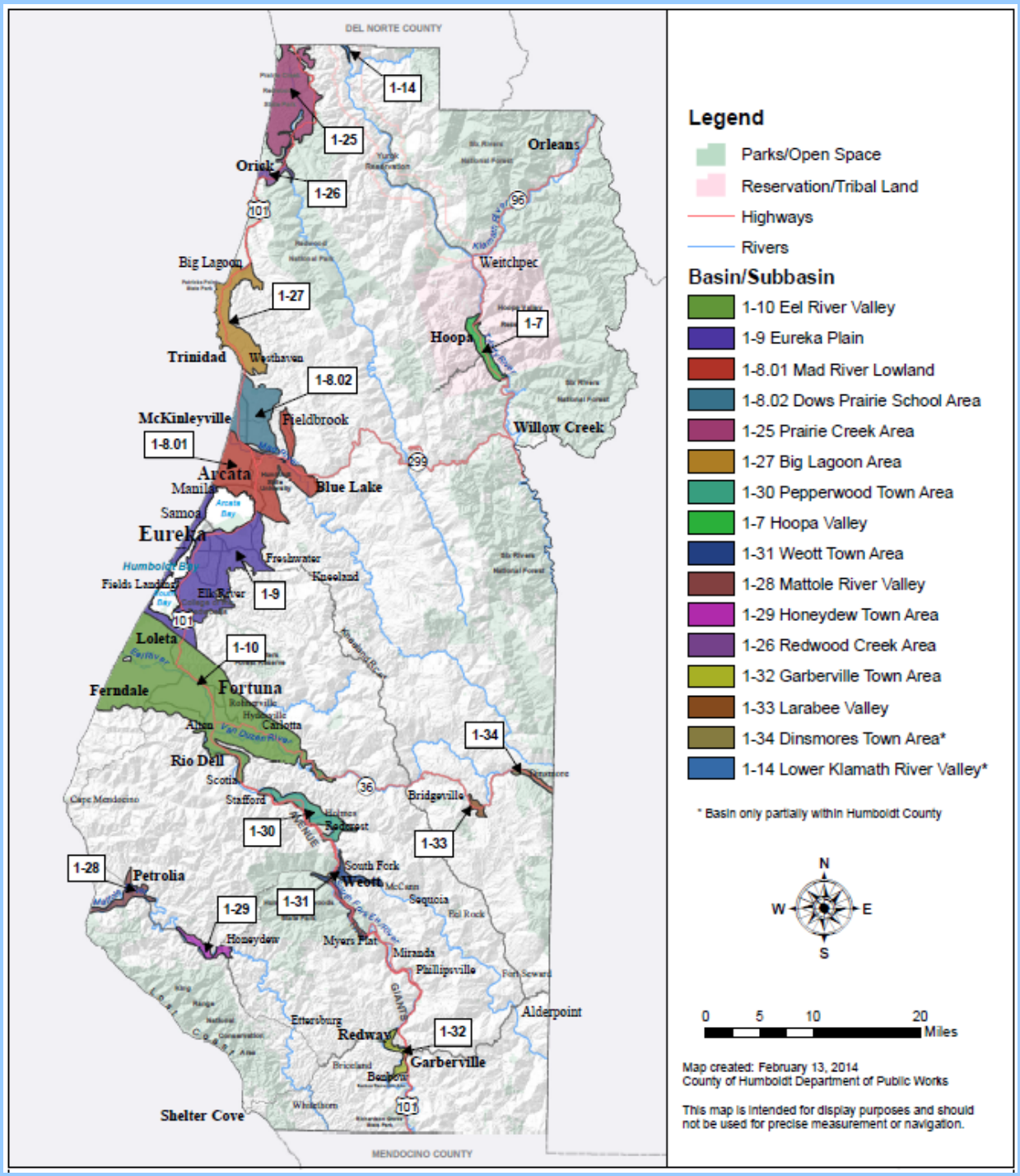
1. Organized around designated alluvial groundwater basins and their prioritization rankings

Humboldt County Designated Alluvial Groundwater Basins and Sub-basins



Source:
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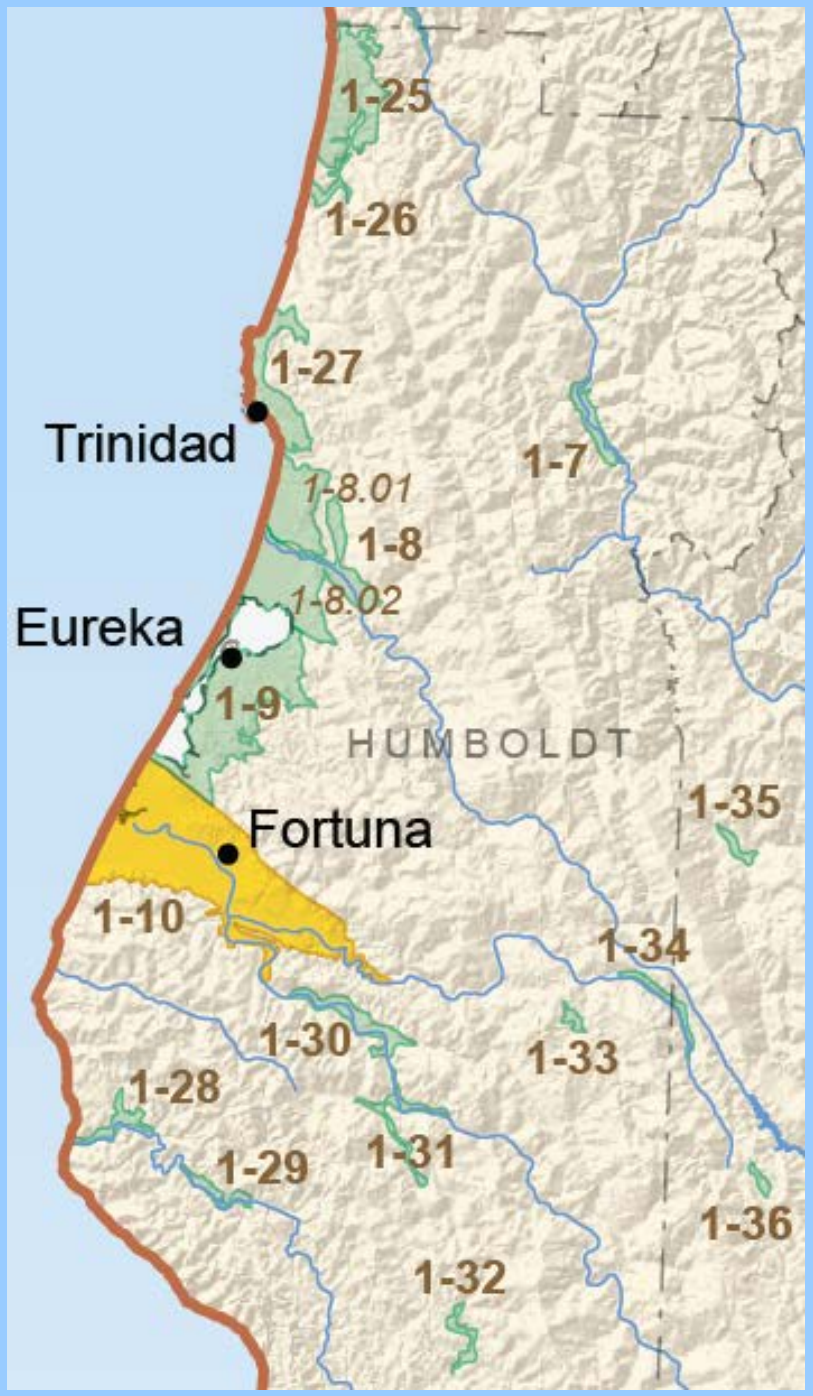

Humboldt County
Basin Prioritization Ranking

Source:
DWR Bulletin 118

Groundwater basin/subbasin

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4. Overall goal is to operate within sustainable yield: maximum quantity of water that can be withdrawn annually without causing an undesirable result

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2. Requires groundwater sustainability plans for high- and medium-priority basins
3. Requires formation of local groundwater sustainability agencies
4. Overall goal is to operate within sustainable yield: maximum quantity of water that can be withdrawn annually without causing an undesirable result
5. Undesirable results include:
    - Lowering of groundwater levels and depletion of supply
    - Reduction of groundwater storage
    - Seawater intrusion
    - Degraded water quality
    - Subsidence
    - Depletions of interconnected surface waters with adverse impacts on beneficial uses of the surface water

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   - Registration
   - Fees
   - Inspections
   - Measuring devices

   (not de minimis extractors)
   - Spacing
   - Control extractions (regulate/limit/suspend)
   - Reporting
   - Enforcement

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   - Reporting
   - Enforcement
7. Groundwater sustainability plans require:
   - Advisory committee and maintenance of interested persons list
   - Description of the basin
   - Measurable objectives to achieve the sustainability goal
   - Implementation measures (monitoring and management components, as applicable)

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   - Description of the basin
   - Measurable objectives to achieve the sustainability goal
   - Implementation measures (monitoring and management components, as applicable)
8. Groundwater plans will not establish or determine groundwater rights, but will govern how those rights are exercised

Key Aspects of Sustainable Groundwater Management Act

6. Groundwater sustainability agencies will have powers and authorities, which they may elect to exercise:
   - Registration
   - Fees
   - Inspections
   - Measuring devices

   (not de minimis extractors)
   - Spacing
   - Control extractions (regulate/limit/suspend)
   - Reporting
   - Enforcement
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   - Implementation measures (monitoring and management components, as applicable)
8. Groundwater plans will not establish or determine groundwater rights, but will govern how those rights are exercised
9. State can intervene if local agency is not managing its groundwater sustainably or not complying with the Act

General Timeline for Sustainable Groundwater Management Act

	State	Local
Late 2015/ Early 2016	Funding program for local agencies to develop groundwater plans (from Prop. 1)	
2016	June 1: DWR to adopt regulations for implementing program	
2017	DWR to publish Bulletin 118 – Interim Update (boundaries, prioritization)	Jan. 1: Due date for "alternative submittals" June 30: Groundwater sustainability agencies established for all high- and medium-priority basins
2018		
2019		
2020		
2021		
2022		Jan 31: Groundwater sustainability plans adopted for high- and medium-priority basins not in critical overdraft
2042		Achieve sustainability goal

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5. Local cost burden to implement legislation
6. Reasonable timeline:
   - Determine groundwater sustainability agency by June 30, 2017
   - Adopt groundwater sustainability plan by January 31, 2022
   - Achieve sustainability goals by 2042

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2. Direct Public Works to convene a workshop for stakeholders in April 2015 and return to the Board with a summary of stakeholder feedback
3. Authorize staff to apply for Prop. 1 funds (likely early 2016)