

CASGEM Groundwater Basin Prioritization (June 2014)

Summary

The CASGEM Groundwater Basin Prioritization (Basin Prioritization) is a statewide ranking of groundwater basin importance that incorporates groundwater reliance and focuses on basins producing greater than 90% of California's annual groundwater.

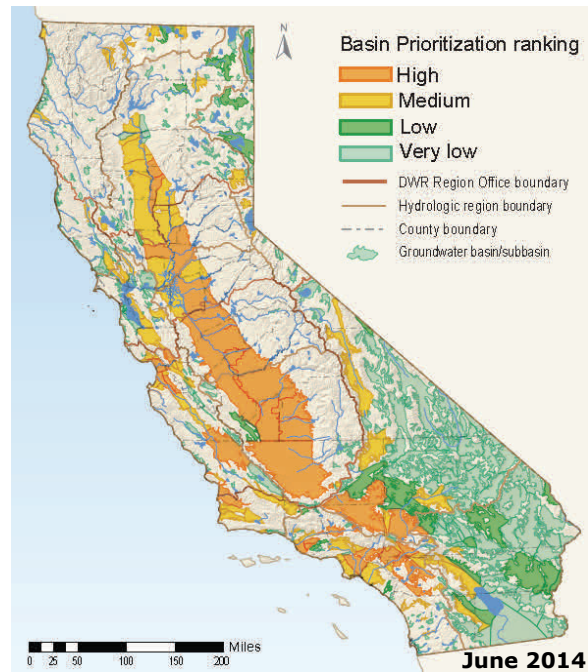
The results are a statewide assessment, therefore it is important to recognize the statewide findings are not intended to diminish the local importance of the smaller size or lower-use groundwater basins.

Criteria and Data Sources

The CWC (§10933) specifies the criteria listed below for prioritizing the groundwater basins. To address the prescribed criteria, DWR used available statewide data sets which are listed after the corresponding criteria.

- 1) Overlying population— Department of Finance (DOF) 2010 California census data
- 2) Projected growth of overlying population— DOF 2010 to 2030 population growth projections
- 3) Public Supply Wells— Department of Public Health Drinking Water Supply Database.
- 4) Total number of wells— DWR 2012 Well Master Database
- 5) Irrigated acreage overlying the basin— DWR most recent available land use data and public comment feedback
- 6) Reliance on groundwater as the primary source of water— DWR most recent available land use data and public comment feedback
- 7) Impacts on the groundwater; including overdraft, subsidence, saline intrusion, and other water quality degradation— DWR staff review
- 8) Any other information determined to be relevant by DWR— DWR staff review

Final Basin Prioritization Map



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California Statewide
Groundwater Elevation
Monitoring Program

CASGEM Groundwater Basin Prioritization

The California Department of Water Resources (DWR) implemented the California Statewide Groundwater Elevation Monitoring (CASGEM) Program in response to legislation enacted in the California Water Code (CWC) as part of California's 2009 Comprehensive Water package.

The California Water Code (§10933 and §12924) requires DWR to prioritize California's groundwater basins and subbasins (as identified in DWR's Bulletin 118 update 2003) and conduct groundwater basin assessments. As such, DWR developed the CASGEM Groundwater Basin Prioritization Process.

For more information please visit the CASGEM Program website:
www.water.ca.gov/groundwater/casgem



Department of Water Resources
California Natural Resources Agency
State of California

June 2014

CASGEM Groundwater Basin Prioritization

Methodology

The data distribution for each data component was evaluated and divided into six ranges, having a value of 0-5. For each basin, each data component was assigned a score according to its corresponding ranking range. The Total Wells data component values were reduced by 25% due to data confidence, prior to calculating total groundwater basin ranking value.

The table below illustrates how the data distribution for each data component was divided into ranking ranges, and their corresponding score.

Data Component Ranking Value	Data Components and Ranking Ranges						
	Population		PSW Density	Total Well Density	Irrigated Acreage	Groundwater Reliance	
	Density	Projected Growth				GW Use	Amount of Total Supply
	per mile ²	%	per mile ²	per mile ²	acre/mile ²	acre-feet/acre	%
0	x < 7	x < 0	x = 0	x = 0	x < 1	x < 0.03	x < 0.1
1	7 ≥ x < 250	0 ≥ x < 6	0 > x < 0.1	0 > x < 2	1 ≥ x < 25	0.03 ≥ x < 0.1	0.1 ≥ x < 20
2	250 ≥ x < 1,000	6 ≥ x < 15	0.1 ≥ x < 0.25	2 ≥ x < 5	25 ≥ x < 100	0.1 ≥ x < 0.25	20 ≥ x < 40
3	1,000 ≥ x < 2,500	15 ≥ x < 25	0.25 ≥ x < 0.5	5 ≥ x < 10	100 ≥ x < 200	0.25 ≥ x < 0.5	40 ≥ x < 60
4	2,500 ≥ x < 4,000	25 ≥ x < 40	0.5 ≥ x < 1.0	10 ≥ x < 20	200 ≥ x < 350	0.5 ≥ x < 0.75	60 ≥ x < 80
5	x ≥ 4,000	x ≥ 40	x ≥ 1.0	x ≥ 20	x ≥ 350	x ≥ 0.75	x ≥ 80

Notes: Population growth is percent growth from 2010 to 2040 (30 year growth). x = Component Dataset Value.

The overall basin ranking is a calculation of the scores for each of the 8 criteria, using the following formula: Overall Basin Ranking = Population + Population Growth + Public Supply Wells + (Total Wells x .75) + Irrigated Acreage + [(Groundwater Use + % of Total Supply)/2] + Impacts + Other information.

The data distribution of the basin ranking was evaluated and divided into four ranges to establish the basin priority of Very Low, Low, Medium, and High. The basin priority ranking ranges are summarized below:

Very Low Priority Ranking Range	Low Priority Ranking Range	Medium Priority Ranking Range	High Priority Ranking Range
x < 5.75	5.75 ≥ x < 13.42	13.42 ≥ x < 21.08	x ≥ 21.08

Note: x = Overall Basin Ranking Score

Final Statewide Results (June 2014)

Basin Ranking	Basin Count	Percent of Total	
		GW Use*	Overlying Population*
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

Note: * Estimated percentages are based on total groundwater use and population overlying all groundwater basin areas Statewide.

Findings

Basin Prioritization findings indicate that 127 of California's 515 groundwater basins and subbasins are High and Medium priority.

These basins account for 96% of California's annual groundwater pumping and supply 88% of the population which resides over groundwater basins. The remaining 388 basins are Low and Very Low priority and comprise 75% of the groundwater basins in the State.

Basin Prioritization is being used to align resources in the implementation of the CASGEM Program. Due to limited resources, DWR will focus on the High and Medium priority groundwater basins first.

Although CASGEM is a voluntary program, not participating could result in ineligibility for a State water grant or loan. Grant eligibility will be determined by the respective grant program.