

Preparing for a Challenging Water Future

Felicia Marcus
CWA

Sacramento, May 20, 2014



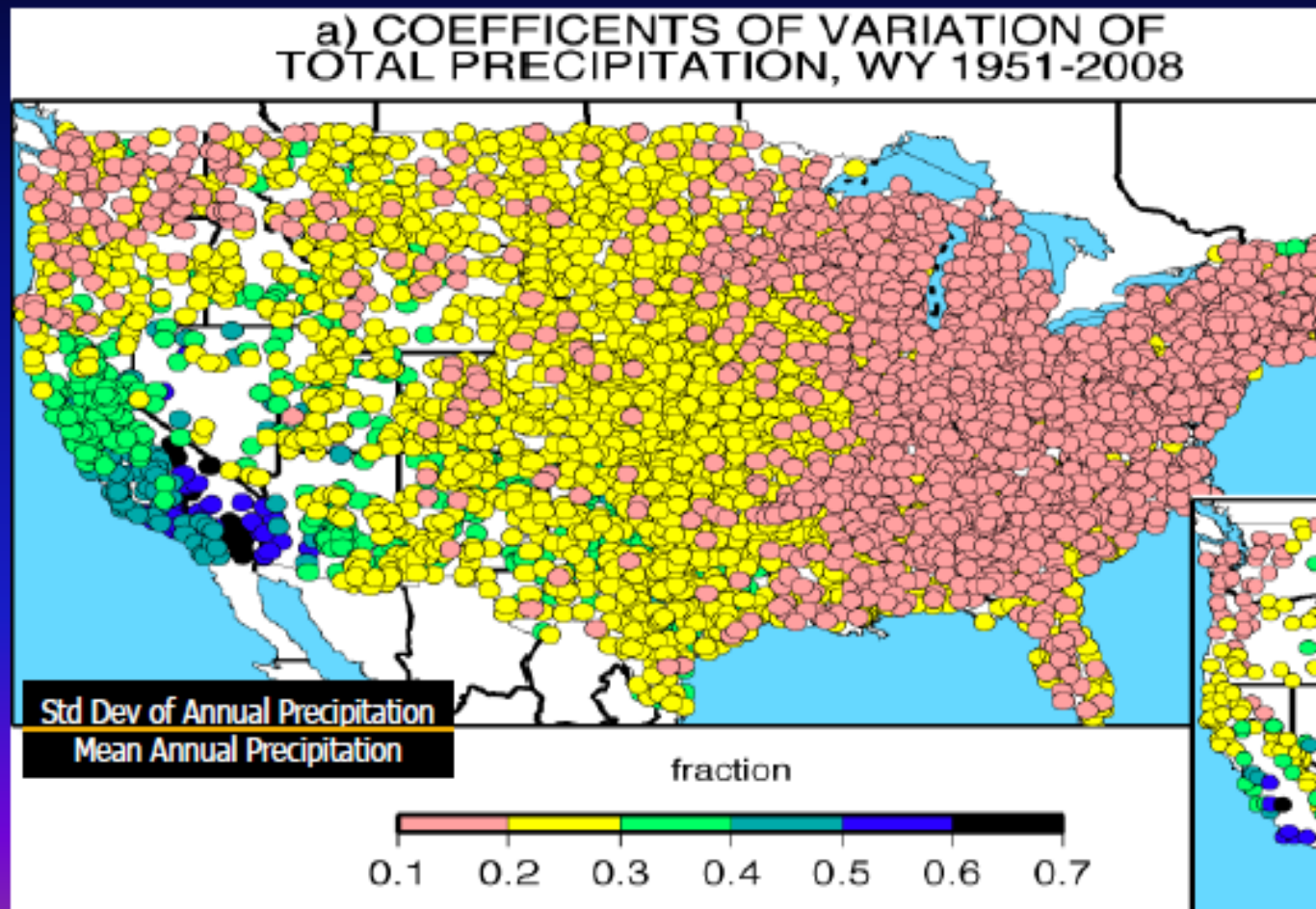
Overview

- Setting refresh
- Administration's Water Action Plan
- Drought update
- Groundwater update
- Drinking Water update
- Where we go from here
- Not: Delta/Contaminated Groundwater
generally/Stormwater

Setting

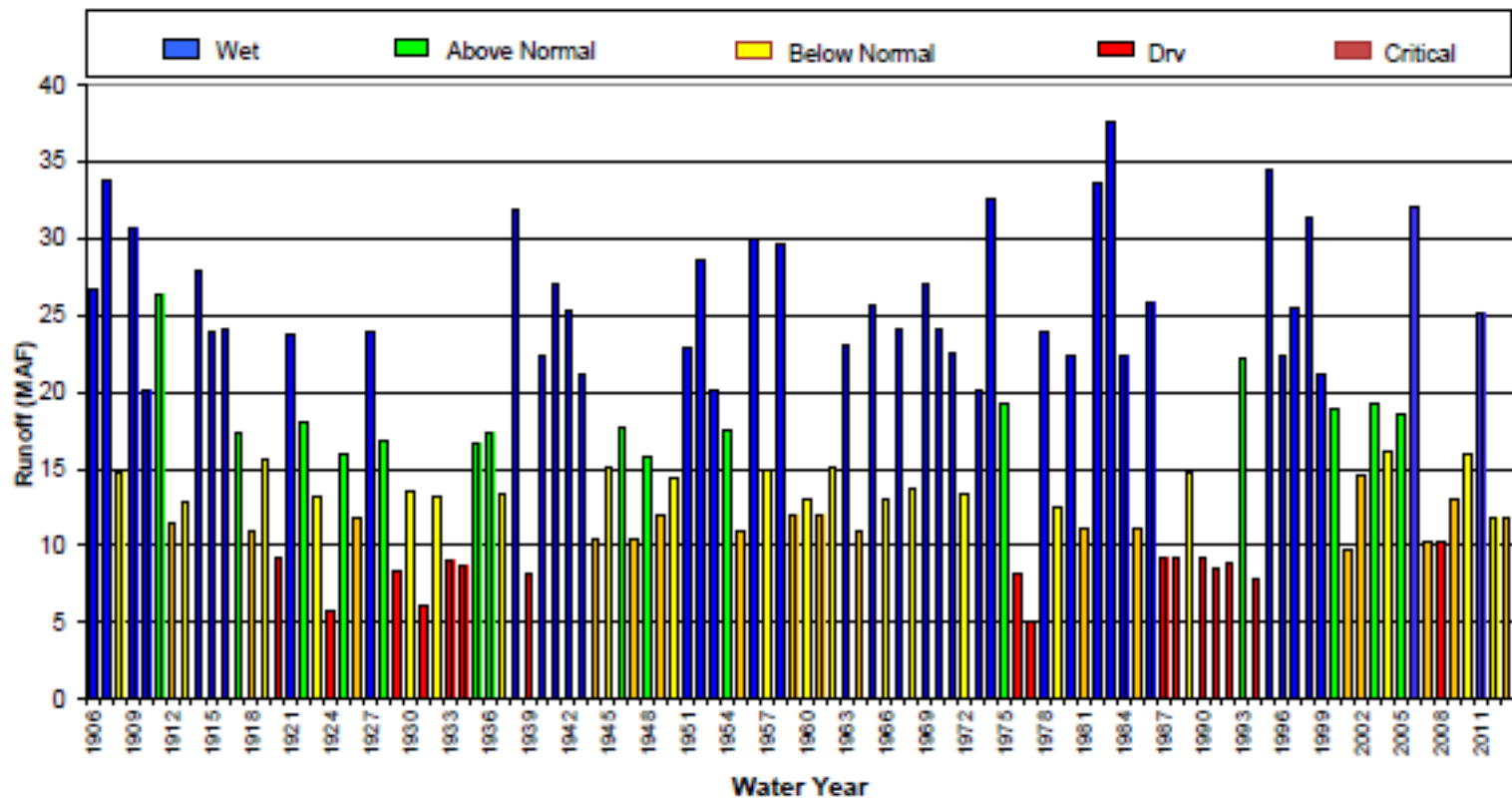
- Variable hydrology
 - Year to year
 - Location to Location
 - Time of year
- Mix of sources
 - Surface Water system local or imported (extensive storage/conveyance)
 - Groundwater (intensely local)
 - Every locale different mix
 - Impact of drought varies too
 - Mix of water rights too
- Drought
 - Worst in impact in modern history
 - 3rd re precip
 - More pop; more irrigated ag; more env water make impact greater than the other two
- Climate change and other drivers as gamechangers

California's Precipitation is Uniquely Variable



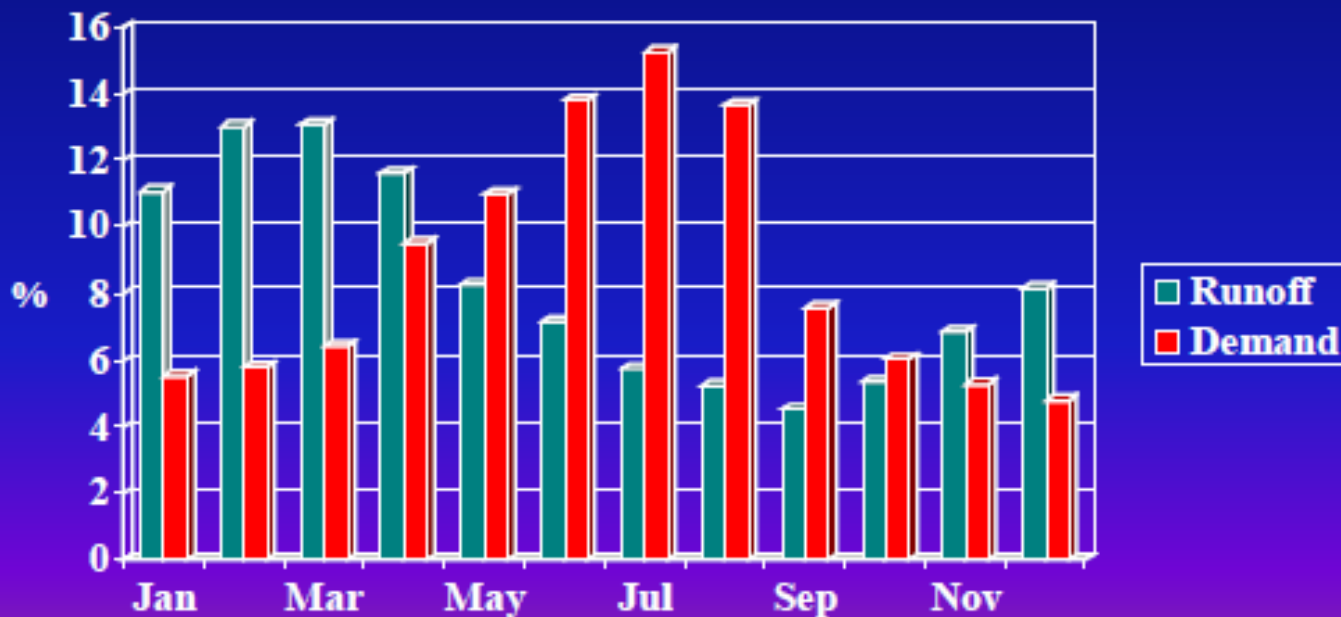
Annual Variation of Runoff

Sacramento Valley Water Year Types

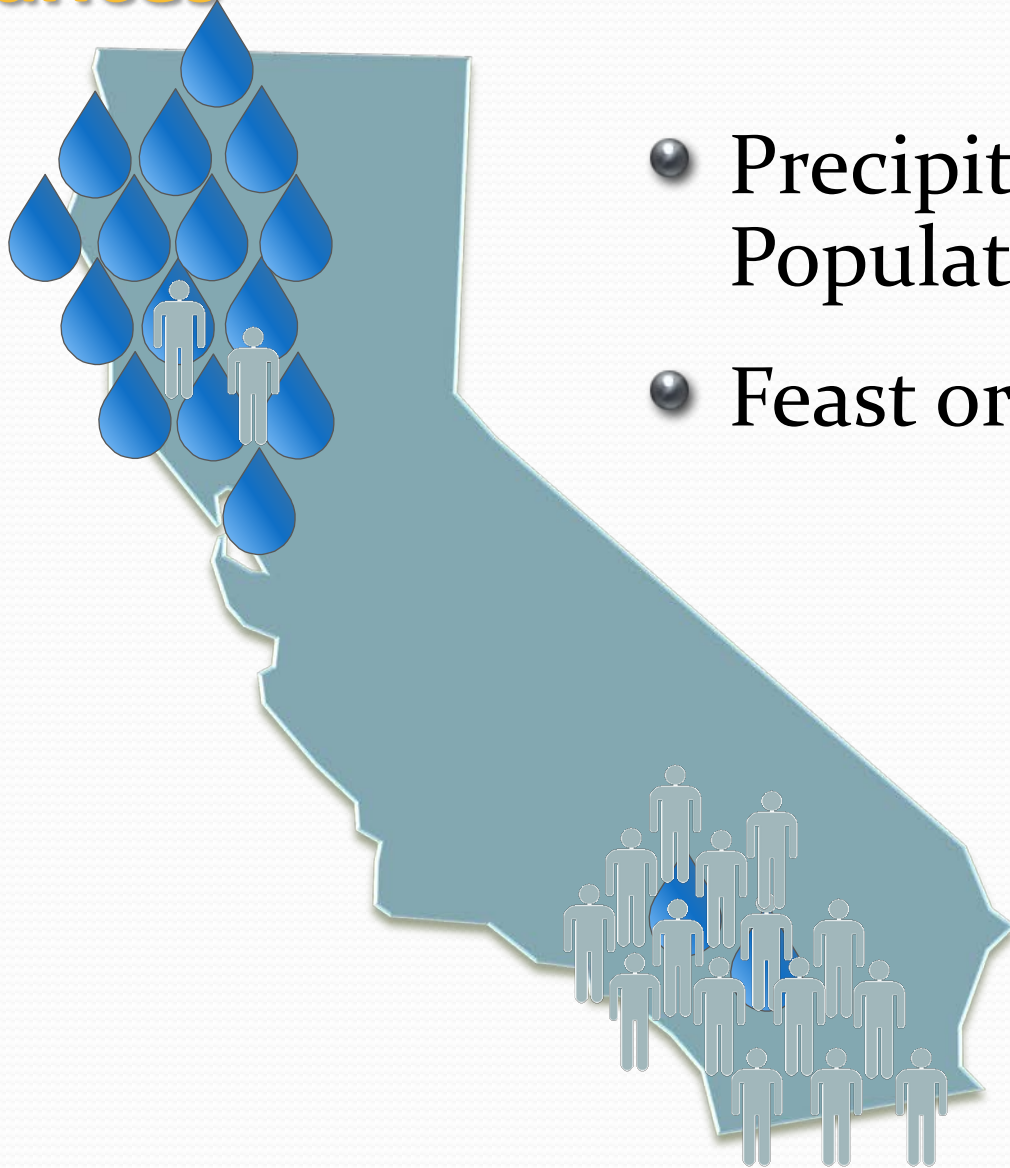


Seasonal Mismatch of Supply and Demand

- Runoff is greatest in the winter / spring.
- Demand peaks in the summer.



Managing Hydrologic and Geographic Imbalances



- Precipitation vs. Population
- Feast or Famine

Major Water Projects

- 💧 Federal – Central Valley Project (CVP)
- 💧 State – State Water Project (SWP)
- 💧 Local – Many other projects throughout state, including Colorado River system, Hetch Hetchy, EBMUD, Owens Valley

Source: Water Environment Foundation



Future drivers require change

- Challenges, e.g.,
 - Climate change
 - Population growth
 - Food security
- Other limits to deal with
 - Ecosystem management
 - Silos
 - Traditional if comfortable dialogue
 - Paradigm shift essential and happening

California Water Action Plan

- **Make Conservation a California Way of Life**
- **Increase Regional Self-Reliance and Integrated Water Management Across All Levels of Government**
- Achieve the Co-Equal Goals for the Delta
- Protect and Restore Important Ecosystems
- **Manage and Prepare for Dry Periods**
- **Expand Water Storage Capacity and Improve Groundwater Management**
- **Provide Safe Water for All Communities**
- Increase Flood Protection
- Increase Operational and Regulatory Efficiency
- Identify Sustainable and Integrated Financing Opportunities



The Drought—*a glimpse*

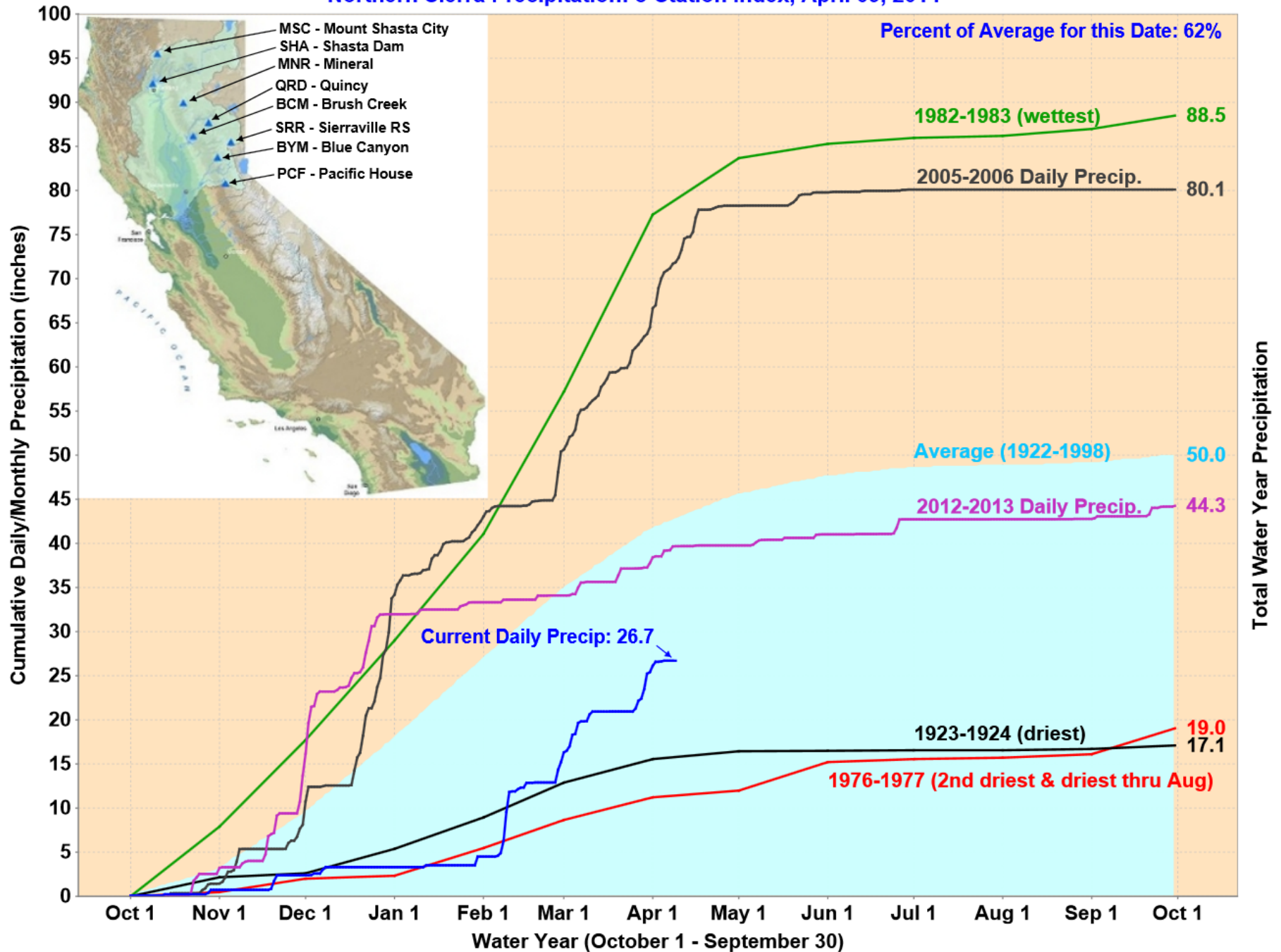
“When the well is dry, we know the worth of water.”

Benjamin Franklin
Poor Richard's Almanac

Current crisis: Worst drought in modern times

- 2013 “driest” year on record
- Snowpack fraction of average/ “normal”
- Reservoir draw down due to unusual 2012 precipitation pattern
- Could still rain, as in “March miracle” of the 90s but that is not a strategy, and it is May.
- Third worst on record, with far greater impact than the 1920s
- Beyond anything we’ve dealt with
- Harbinger of things to come—think Australia or Climate Change

Northern Sierra Precipitation: 8-Station Index, April 09, 2014

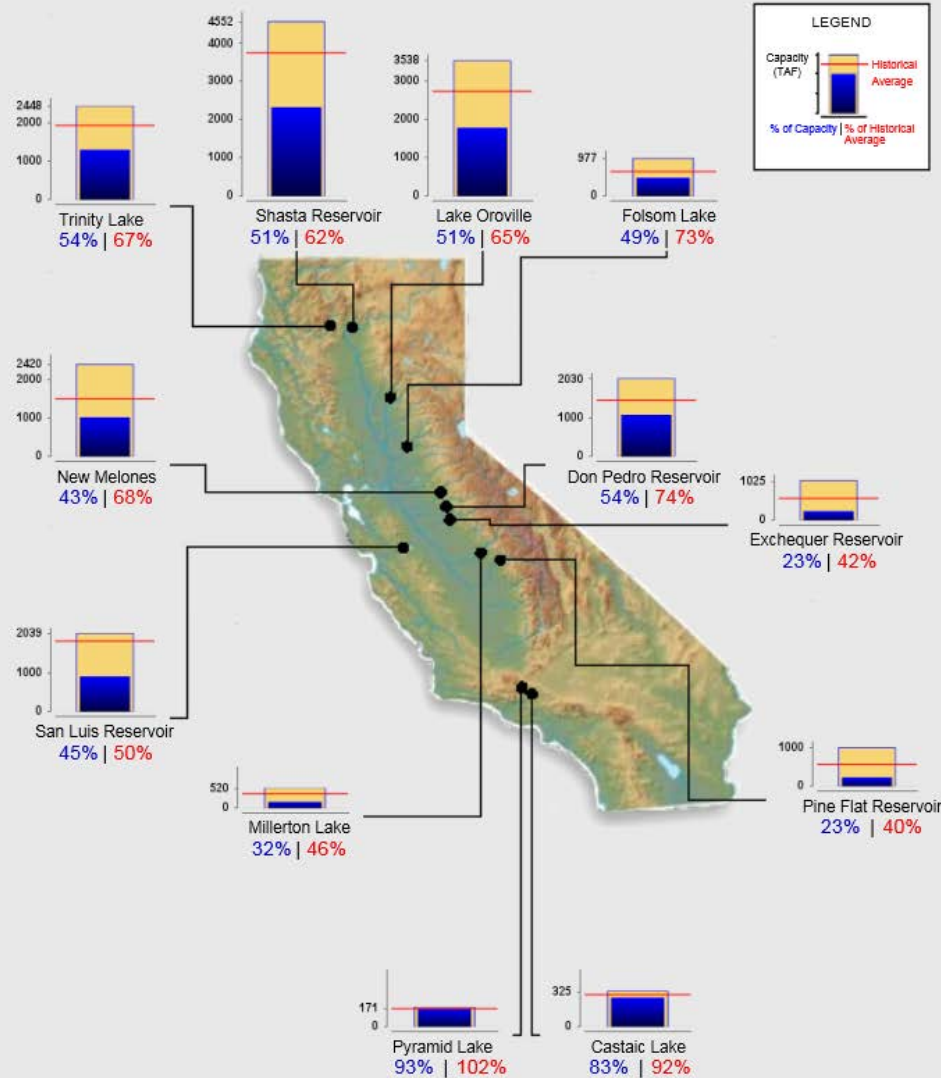




Reservoir Conditions

Ending At Midnight - April 8, 2014

CURRENT RESERVOIR CONDITIONS





Jan 18, 2013



Jan 18, 2014

Actions—

- Regional differences and choices
 - Different mix of sources and economies
 - Water right priorities and different groundwater regimes
 - Choices re conservation, priorities, etc.
- Drought Task Force
- Actions taken and potential:
 - Emergency declarations—Governor Brown February 17, 2014/April 25, 2014

Actions—con't

- Emergency Legislation--\$68om+
- Disaster relief—Farm Bill/USDA/Food Banks/NGOs
- Transfers acceleration
- Temporary standards implementation adjustments
- Conservation; Recycling
- Decisions re allocation/salinity control/public health and safety by state and federal projects
- Water rights implementation: “Curtailments”
- What is “reasonable use” in a drought?

Drought legislation → \$\$\$

\$549 million from the accelerated expenditure of voter-approved bonds, Proposition 84 and Proposition 1E, in the form of infrastructure grants for local and regional projects that are already planned or partially completed to increase local reliability, including recapturing of storm water, expanding the use and distribution of recycled water, enhancing the management and recharging of groundwater storage and strengthening water conservation.

- \$30 million from the Greenhouse Gas Reduction Fund to the Department of Water Resources (DWR) for direct expenditures and grants to state and local agencies to improve water use efficiency, save energy and reduce greenhouse gas emissions from state and local water transportation and management systems.
- \$14 million for groundwater management across the state, including assistance to disadvantaged communities with groundwater contamination exacerbated by the drought.
- \$10 million from the Greenhouse Gas Emissions Fund for the California Department of Food and Agriculture to invest in irrigation and water pumping systems that reduce water use, energy use and greenhouse gas emissions.
- \$15 million from the General Fund for Emergency Drinking Water Fund to address emergency water shortages due to drought.
- \$13 million from the General Fund to augment the California Conservation Corps and local community conservation corps to expand water use efficiency and conservation activities and to reduce fuel loads to prevent catastrophic fires.
- \$25.3 million from the General Fund for food assistance, which will be structured to maximize the potential federal drought assistance that can be provided to provide food assistance to those impacted by the drought.
- \$21 million from the General Fund and federal funds for housing related assistance for individuals impacted by the drought.

Also emergency ability to enforce water rights more expeditiously and efficiently

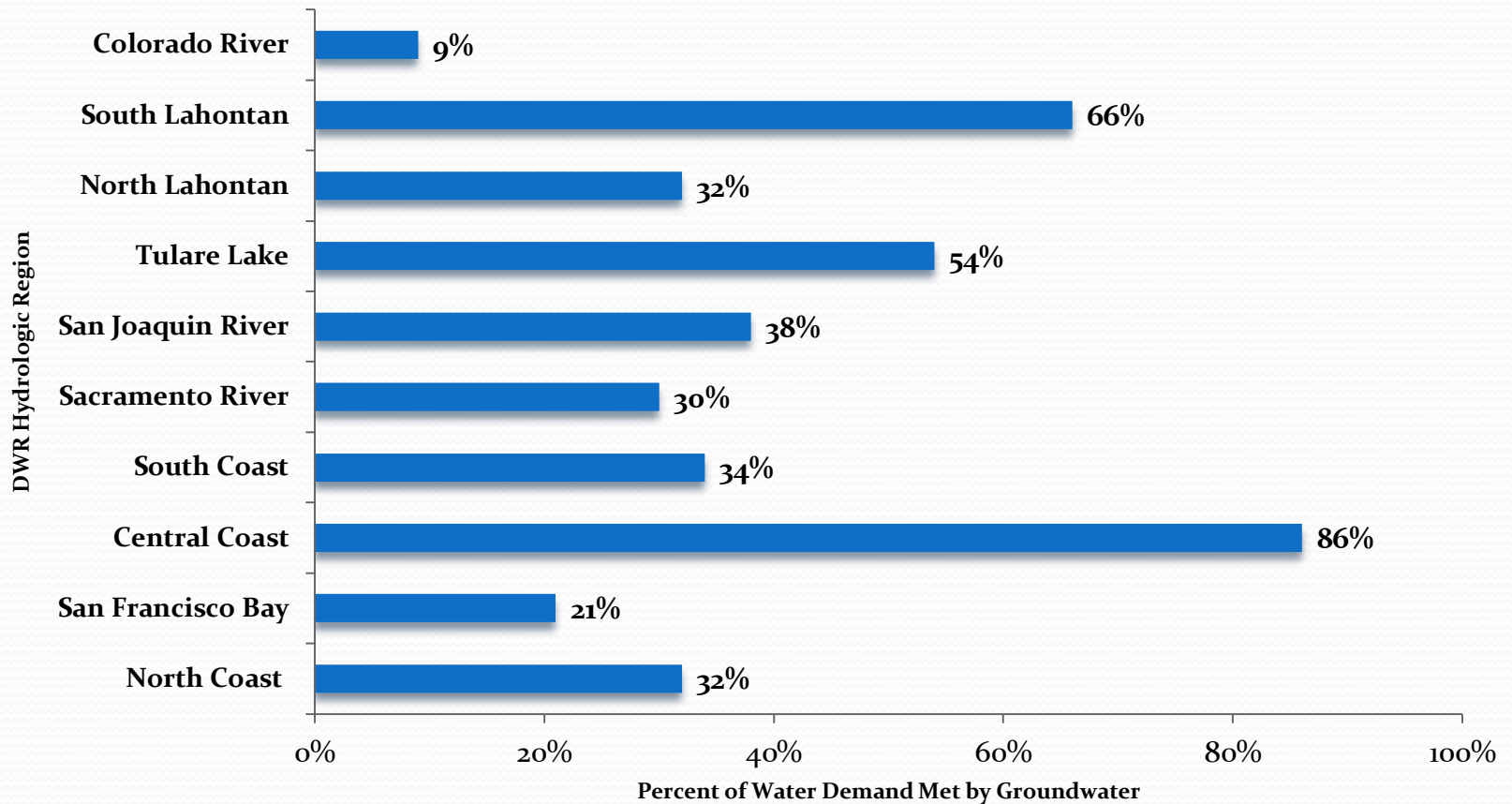
Groundwater update

- Groundwater in California
- Contamination note
- Dramatic change in dialogue in last year
- Players and Proposals
- Concepts and concerns
- What's next

Quick Facts on California Water Groundwater Use

- Percentage of Urban and Agricultural Demands met with groundwater
 - Normal Year: 39 percent
 - Dry year: 45 percent
 - Drought: almost 60 percent
- About 9 million Californians (1 in 3) rely solely on groundwater to meet their needs
- On the Central Coast, 86 percent of drinking water comes from groundwater
- Issues, e.g.,
 - Subsidence
 - Infrastructure
 - Neighbor to neighbor impacts
 - Storage loss; storage need
 - Water quality
 - Ecosystem impacts

% Water Demand Met by Groundwater

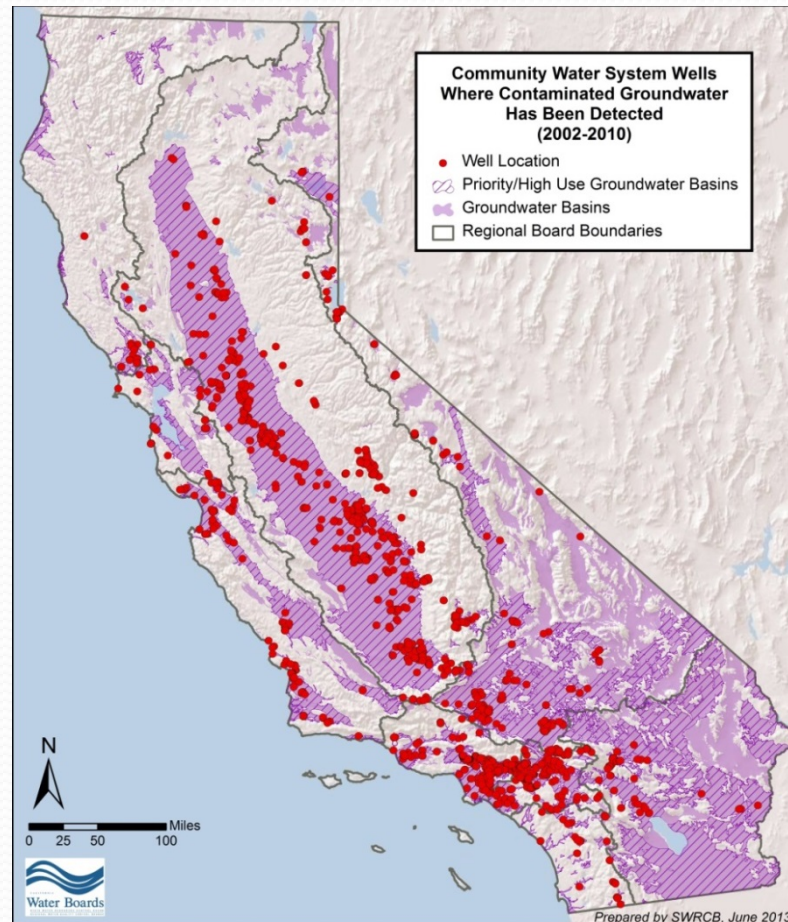


Western States' Approach to Groundwater Management

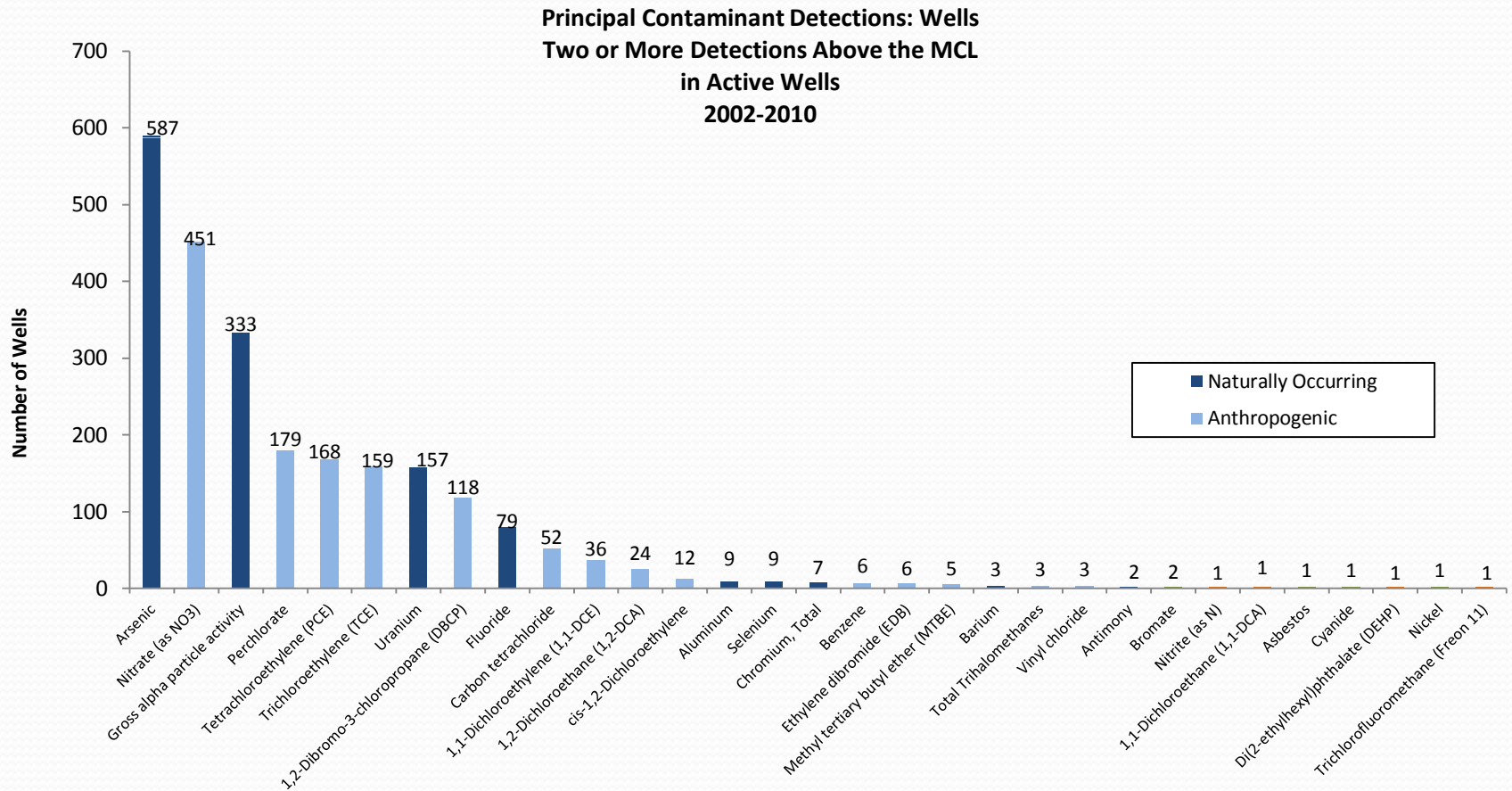
Groundwater Management Components:	California	Arizona	Texas	Colorado	New Mexico
Statewide groundwater use permitting	—	X	—	X	X
Active management areas	—	X	X	X	X
Statewide policy—well data made public	—	X	X	X	X
Statewide policy—metering, measurement, and reporting requirements	— ^a	X	—	X	X

^a SBX7 6 provides for statewide measurement (at the basin level), but not metering of water extraction.

Community Well Systems Where Contamination has been Detected








Community Water Systems with Principal Contaminants Detected

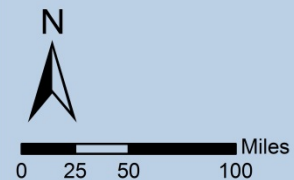


Policy Reports

- Legislative Analysts Office – 2009
- Public Policy Institute of California – 2010
- ACWA Framework - 2011
- UCLA Pritzker Brief – 2011
- Stanford Woods Institute – 2011
- Others....
- Bars and coffee shops

**Adjudicated Grounwater Basins,
Groundwater Basins Subject to
Critical Condition of Overdraft,
and Special Districts**

-  Special Districts
-  Adjudicated Basins
-  Critical Condition of Overdraft
-  Groundwater Basins
-  Regional Board Boundaries



Groundwater Concept Paper

- Starting a conversation about how to approach a conversation that is in fact happening and whose time has come
- Iterative, nothing set in stone
- Looking for right path, right tools, right role
- Bars and coffee shops
- Conversation vs. notice and comment

Key Concepts

- Water board is only part of the solution; perhaps the last part
- Local and regional agencies have many of the tools and authorities needed for effective management; but some need more tools
- Where local and regional efforts are successful we should play a supporting role if needed
- Focus on areas where problems exist and local management is insufficient or lacking; help local management first before stepping in

What We Keep Hearing is Needed

1. **Thresholds** for water level drawdown and water quality for impacted, vulnerable, and high-use basins;
2. Water quality and water level **monitoring data** and data management systems capable of determining if thresholds are being met and evaluating trends;
3. A governance structure with the planning, assessment, and **governance** mechanisms needed to prevent impacts before they occur, clean up contamination where it has occurred, and effectively **manage** groundwater at the basin scale to ensure drawdown and water quality thresholds are attained; and
4. **Funding** to support management and control actions.
5. **Oversight** and **enforcement** in basins where ongoing management and control efforts are not protecting groundwater.

Administration effort

- Key element in Water Action Plan in conjunction with Storage
- Stakeholder meetings
- Workshops
- Modest budget proposals
- Input into Governor's legislative proposals in trailer bill/policy bill
- Proposals:
 - ACWA
 - California Water Foundation
 - Ag Valley Coalition
 - Others
- Remarkable convergence

Astonishing level of agreement

- Preference for local action; need for local tools, authorities, and funding.
- Need for state “backstop” at State Water Board; info and assistance a combo of DWR and State Water Board
- Connection between surface water and groundwater and need to acknowledge
- Reasonable timeframe (2 years/5 years/20 years?)
- Recognition of existing overlying water rights (correlative)
- Has to be part of larger water actions, e.g., items in California Water Action Plan

Key issues

- Governance
- Monitoring—thresholds/use/storage
- Finance
- Surface water/groundwater interaction
- Nature of or triggers for the “backstop”
- DWR/SWRCB roles
- Water Quality
- Stakeholder engagement

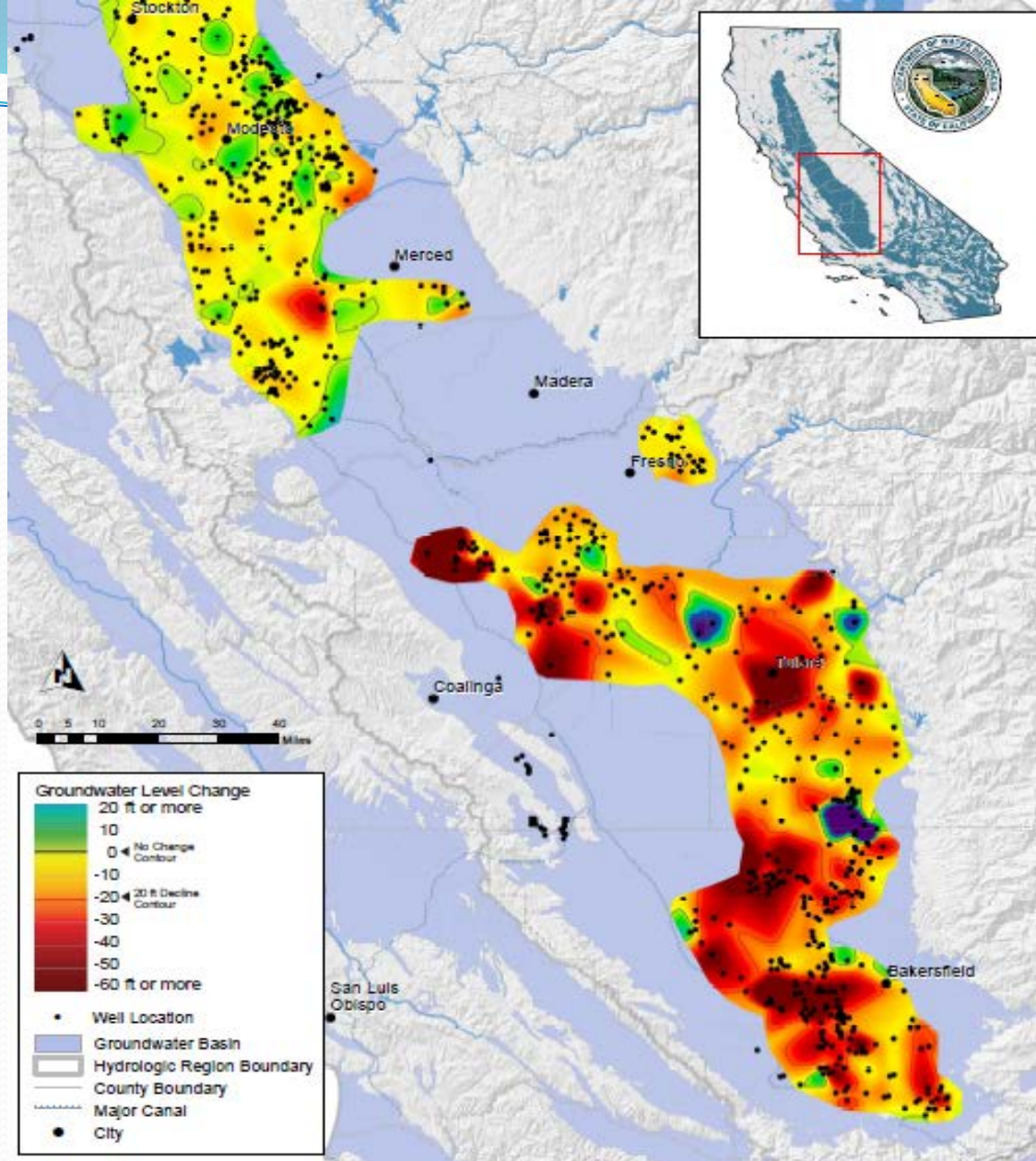
DWR Groundwater Report

- January Drought Proclamation Order – GW Report (Due April 30, 2014)
- Collection of Existing Data and Information
 - California Water Plan
 - CASGEM Monitoring Program
 - Other Monitoring Data
- Identifies Groundwater Basins Statewide
- Assessment of Groundwater Conditions
- Identify Gaps in Groundwater Monitoring

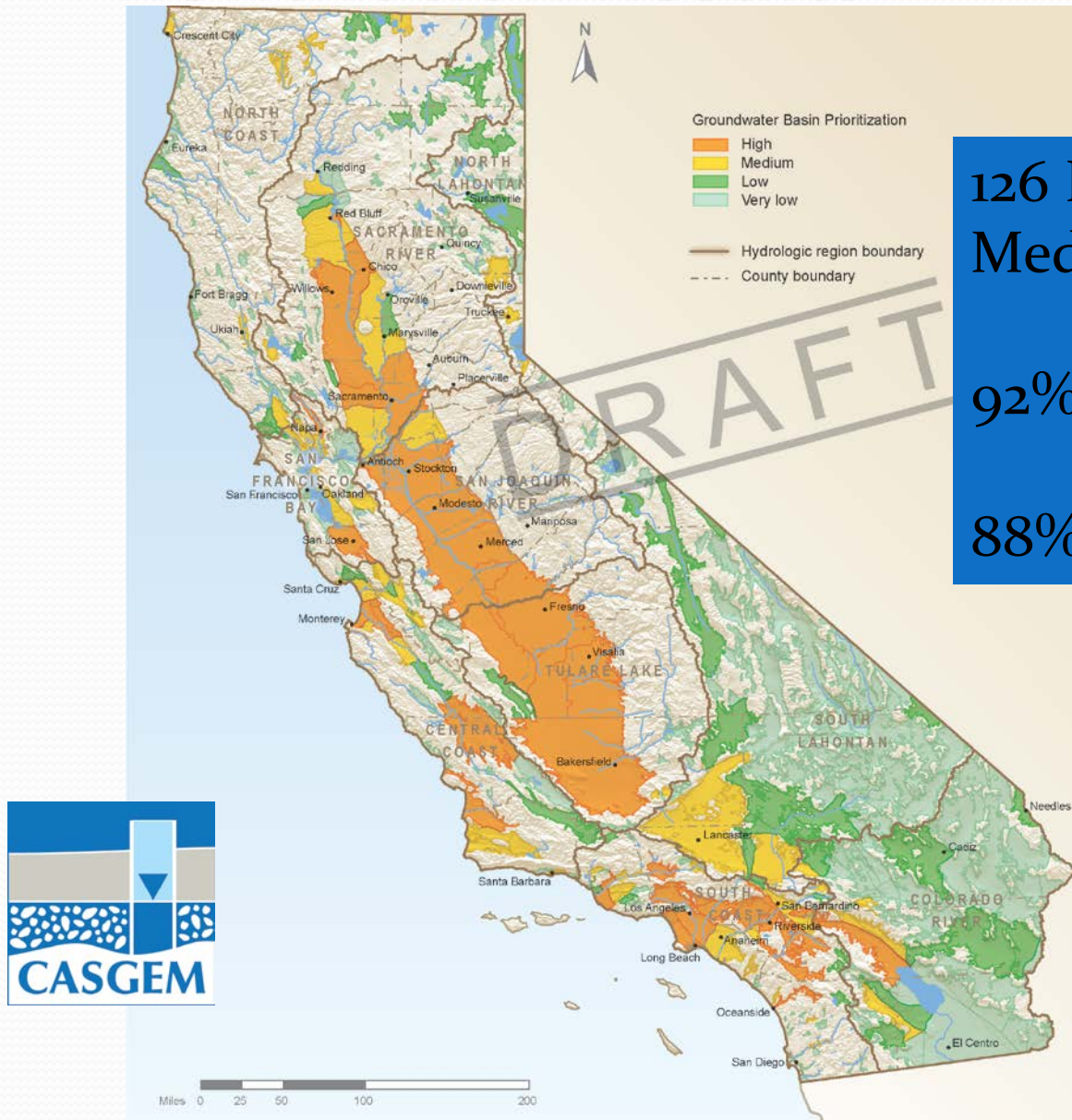


Groundwater Level Change

Southern Central Valley
Spring 2013 to Spring 2014



Basin Prioritization Results



126 High and
Medium

92% GW use

88% Population

Source: Department of Water Resources, CWP 2013



Drinking Water update

- Why?
- One agency responsible source to tap
- Efficiency:
 - One stop shopping for \$ for many communities
 - One agency responsible for permitting recycled water (but public health issues still paramount)
- Long term need to steward every molecule in face of climate change
- Step along path in DAC solutions
- Part of Water Action Plan

How we got here

- Legislation last term
- Water Action Plan
- Governor's Budget proposal
- Drinking Water Task Force
- Trailer Bill language coming soon

Selected issues

- Drinking Water Task Force
- State Board vs. Regional Board location/responsibility
- Field Offices
 - Locations--keep
 - Approach—compliance assistance emphasis
- Public Health Priority
 - Chief Deputy Director reports directly to ED
 - Public Health background
- Public Health/Environmental Health Officers
 - National picture
 - Concern re: split in relationships

Selected issues, con't

- Emergency Response—MOU
- Regulatory homes
 - Permitting remains with Deputy Director (no appeal)
 - Enforcement remains with DD (appeal to State Board)
 - MCLs (go to State Board)
- Other

Other issues and wrap up

- Recycled water advancement
 - 1% financing through SRF (\$800m/150,000 af/yr)
 - General permit for Title 22 uses (June scheduled)
 - SB322 timeline: groundwater recharge/indirect potable/direct potable feasibility report
- Laying foundation for sustainable water management for the future
- Integrated thinking and action
- Problem solving; moving forward



Thank you!!!