Dry 2014??? and Measuring Drought Impacts

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Overview

- Drought background
- Present water conditions, what if 2014 is dry?
- Better measurement of drought impacts

Key Background Points

- Droughts are a normal part of the hydrologic cycle
- Drought conditions develop slowly; drought by itself is not an emergency
- Drought impacts are site-specific and sector-specific
- The greatest drought impacts are related to unmanaged water uses – rangeland grazing, wildfire, etc
- **The greatest economic impacts of drought have been associated with wildfire and forestry damages, not with urban & agricultural water uses**

Lessons Learned from Past Droughts

- Impacts are highly site-specific, and vary depending on the ability of water users to invest in reliability
- Small water systems on fractured rock groundwater sources are most at risk of public health and safety impacts
- Larger urban water agencies can manage 3-4 years of drought with minimal impacts to their customers

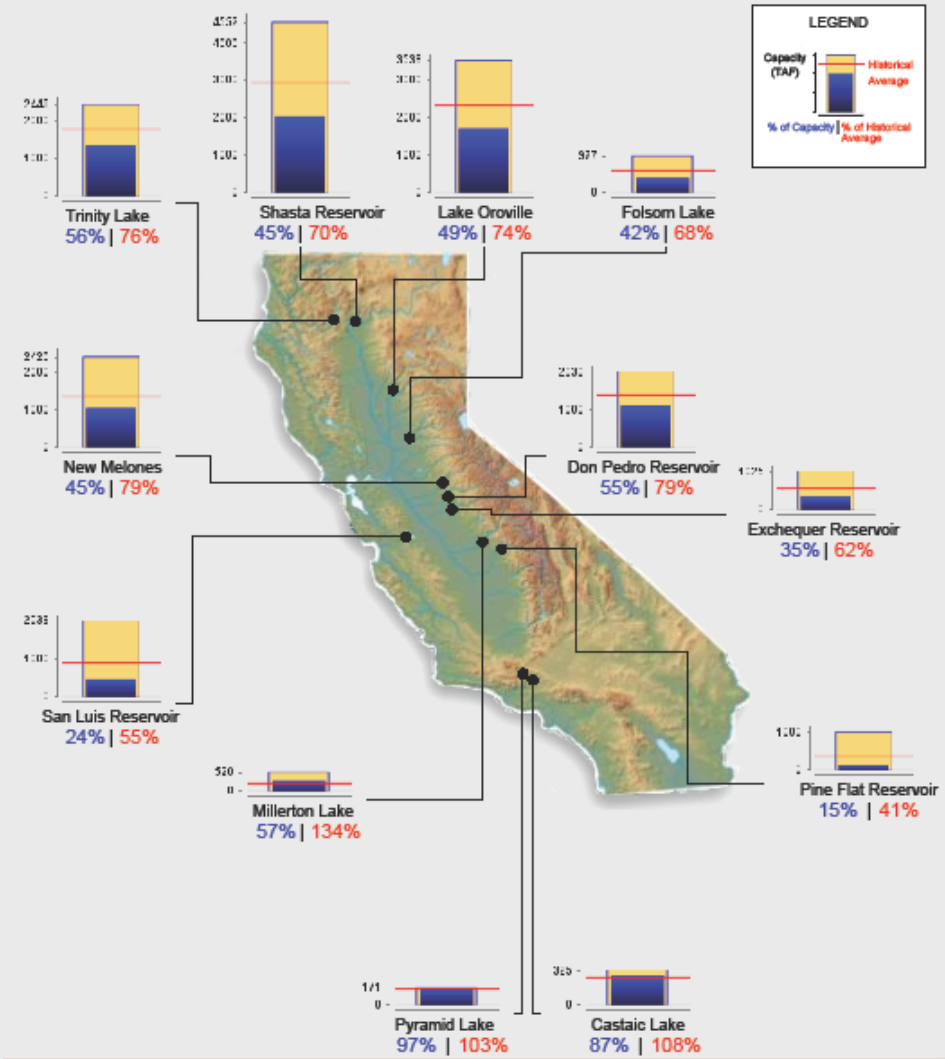
Present Dry Conditions

- Water year 2012 was dry, followed a wet 2011
- Water year 2013 is a second dry year
- Very wet start to 2013 followed by record dry Jan-May for Sac & SJV precip; most reservoirs statewide replenished by wet early winter
- SWP allocation 35%, CVP south of Delta ag at 20%, Friant Class I at 62%
- Colorado River Basin continues dry, however very low probability of California shortage in this decade

Reservoir Conditions

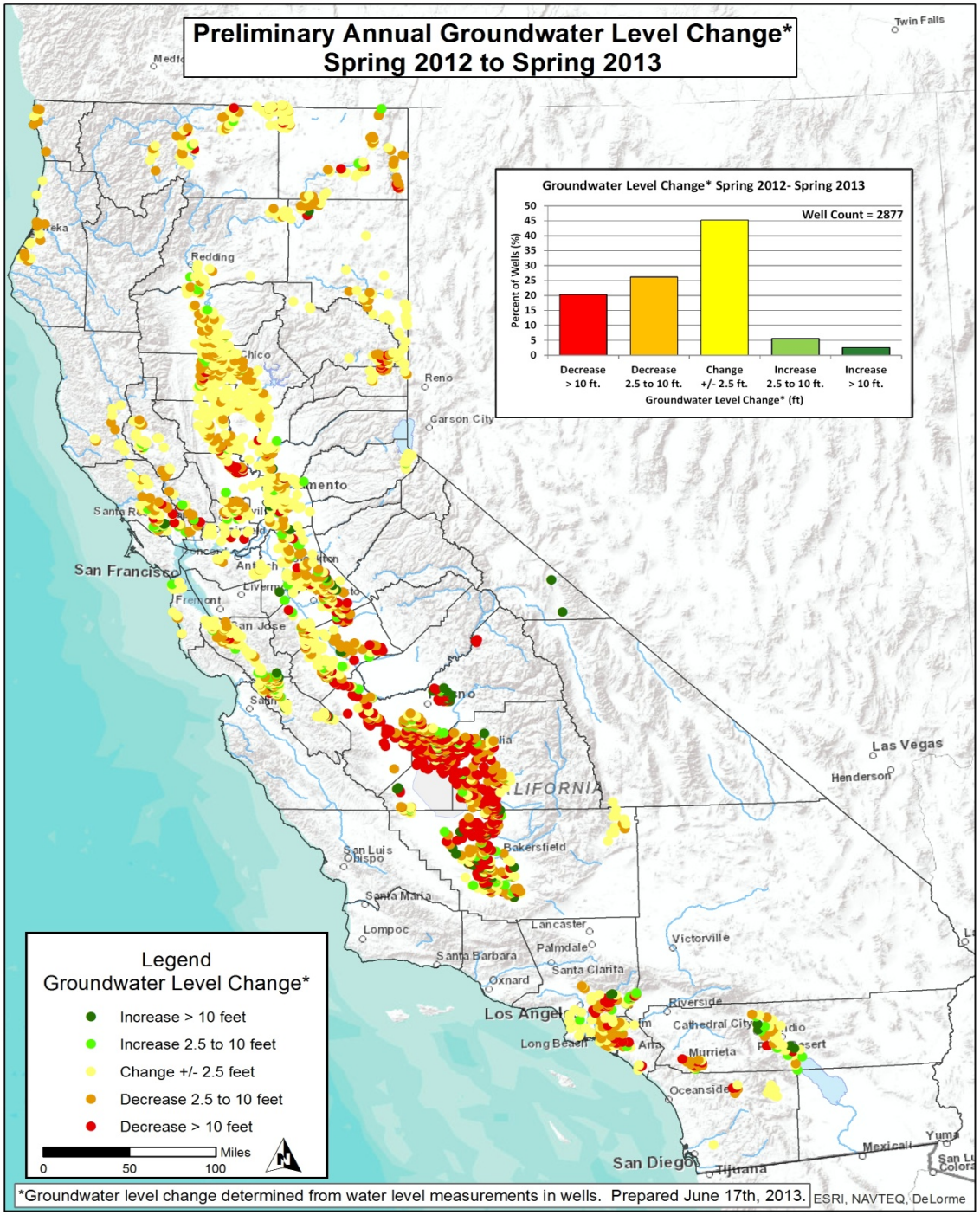
Ending At Midnight - September 5, 2013

CURRENT RESERVOIR CONDITIONS



Graph Updated 09/06/2013 01:15 PM

Preliminary Annual Groundwater Level Change*
Spring 2012 to Spring 2013



*Groundwater level change determined from water level measurements in wells. Prepared June 17th, 2013.

ESRI, NAVTEQ, DeLorme

Tools for Managing Drought

- California's water infrastructure (which facilitates water transfers & exchanges)
- Groundwater
- Water shortage planning
- Response actions such as outreach & conservation

Greatest Risks if 2014 dry

- Catastrophic wildfires (e.g., Southern California in 2003 & 2007)
- Public health & safety impacts to small water systems in rural areas (including wildfire damage)
  - About 8,700 Public Water Systems in California
  - Only 5% of state's PWS subject to UWMP requirements
- Minimal water allocations to some of CVP's San Joaquin Valley agricultural contractors

Statewide Drought Management Challenges

- Assistance for marginal small water systems on fractured rock groundwater sources
- Ability to monitor statewide groundwater conditions and impacts (subsidence)
- Delta conveyance (water transfer limitations)

DWR Preparations for a Possibly Dry 2014

- Planning fall outreach efforts to emphasize the need for water suppliers and users to plan for a dry 2014
- Analyzing new statewide groundwater level information being provided via CASGEM, and contracting with JPL for San Joaquin Valley subsidence monitoring to track recent land subsidence
- Funding a research-level seasonal climate forecast for the winter rainy season
- Facilitating water transfers
- Tracking impacts of dry conditions
- Evaluating the need to convene a state agency coordination committee in early 2014

Tracking Impacts of Dry Conditions/Drought

- DWR and WSWC are working to encourage development of a system for timely quantification of drought impacts
- Workshop held in San Diego in August
- Low-hanging fruit – existing federal datasets (e.g. USDA) that could be compiled and accessed via single portal
  - Either drought.gov or WSWC

Example Data for Quantifying Impacts

- USDA drought disaster program payments by county
- USDA payments in drought-related livestock programs by county (prior farm bill)
- USDA (NASS) fallowed acreage estimates
- USDA net farm incomes (may not correlate w/ drought)
- Federal or state SDWA emergency grants (list of grantees and amounts)
- Annual hydropower generation
- Annual wildfire damages (damage and suppression cost estimates)
- BLM/USFS grazing programs (AUMs)
- Visitor days at state/federal water-based recreation areas
- State unemployment data in targeted farm-dependent communities (may not correlate with drought)

Next Steps by WSWC/DWR on Impact Measurement

- Identifying existing data sets that could be shared – in progress
- Demo set-up on WSWC website, then work with WESTFAST/NIDIS to identify central location (website) for sharing data (e.g. drought.gov)
- Potentially form state-federal workgroup, USDA key to this effort